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PETROLEUM WEEK

A McGRAW-HILL PUBLICATION

GOP platform supports depletion 11
Texas Gulf plants push up crude runs 13
Why world crude postings may fall 14
Canada looks to domestic oil quotas 16
Texas may get its first CO_2 flood 26
Two-in-one rig pares offshore costs 30
Needed: Stain-free rust preventive 34
Venezuela's oil firm gets more money ... 40
Long-life antifreezes pose problems 46
367 tankers are idle; 398 on order 50

Price 50 Cents

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from drawing board to installation . . .

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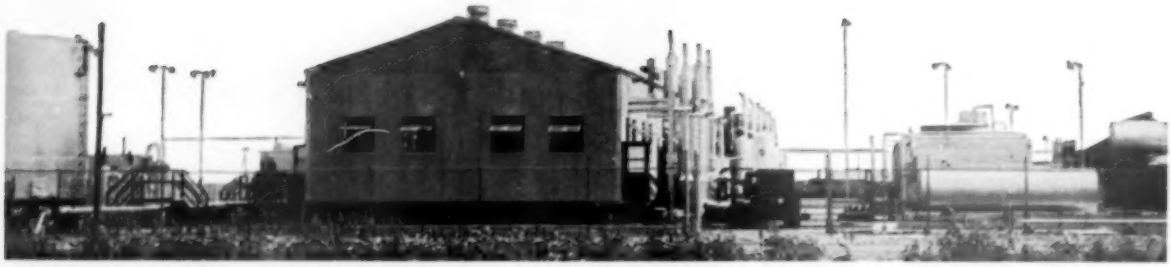
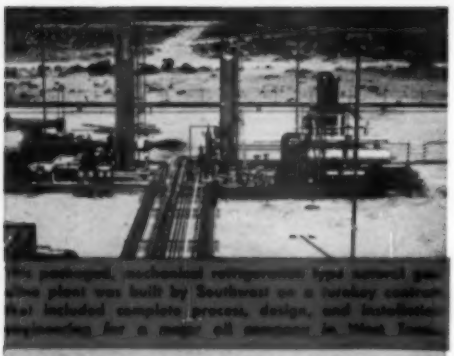
specializes in TURNKEY operations



Southwest designed, engineered and installed this prefabricated water pumping station for a Pan American Petroleum Corporation unitized water-flooding operation in Southwest Texas.



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Drilling through some of the toughest rock strata in all Texas has made short work of many a rotary hose. But the G.T.M.—Goodyear Technical Man—had no qualms when he recommended Style 3153H Hose. He knew its steel-cable-reinforced construction – factory-tested to 5,000 p.s.i.—could take on the severest oil-field service.

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The result? At last report, the G.T.M.'s hose had drilled 34 wells—213,000 feet of hole. And a good deal of that was tough air-drilling.

But that's typical of the outstanding performance you can expect from all Goodyear hose—engineered for every phase of the oil industry. For the full story on any type, contact your G.T.M. through your Goodyear Distributor —or by writing Goodyear, Industrial Products Division, Akron 16, Ohio. . . .

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INSIDE Slant

GOOD EXPLANATION

The use of the expression "pipeline proration" to indicate purchaser proration always has irked the pipeline industry.

And now R. J. Andress, executive vice-president of Service Pipe Line Co., Tulsa, has clearly defined the meaning of the two expressions for those who seem to get them confused.

In a talk before the Tulsa Desk & Derrick Club, Andress said:

"Pipeline proration means that if shipments tendered to a pipeline exceed its capacity, the pipeline must allocate its space equitably between shippers desiring to use it."

Yet today, with pipeline capacity, generally, more than adequate, the term "pipeline proration" still is being used.

To this, Andress said:

"What all these references mean is purchaser proration. This is an entirely different thing. It arises when a buyer of crude oil finds he is buying more than he can sell or use, and therefore reduces his purchases."

The loose use of the term pipeline proration, Andress explains, undoubtedly stems from the last century, when the pipeline frequently was the purchaser of the oil it transported.

LeRoy Menzing
EDITOR

Congrats and $25 to Robert W. GUTEKUNST, Esso Research and Engineering Company • Post Office Box 8, Linden, New Jersey

Joe Roughneck, backbone of the oil and gas industry, sees many a truck of tough Lone Star pipe roll onto well locations from the bayous of the Gulf Coast to the plains of the Williston basin. He knows delivery will be *on time* because Lone Star pipe is stockpiled . . . in quantity . . . in the heart of the oil country.

At Lone Star, every length of API casing, tubing, and line pipe is checked and tested through each manufacturing operation to insure strength and over-all uniformity . . . your guarantee of safe, dependable service on the job.

Neighbor, wherever you are, specify Lone Star and we both get a good deal.

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Views Tha

"During the three weeks ending July 8, crude runs to stills averaged 8,270,000 b/d, an increase of more than 300,000 b/d over the level of May and early June, and more than 300,000 b/d above year-ago levels. Mid-summer is the period when total oil consumption is reduced because of seasonal factors. Yet total refinery runs in the latest three weeks have exceeded by more than 400,000 b/d the level estimated as required to meet and maintain adequate inventories.

"This is economic nonsense . . . The responsibility for adjusting industry operation to a lower rate of growth in oil consumption rests principally and individually with the management of the larger companies that refine the bulk of the petroleum products for distribution to the consuming public. Each company should assume its share of this responsibility."

—MINOR S. JAMESON, JR.
Executive vice-president
Independent Petroleum Assn.
of America

"I've asked a number of savvy people in all branches of the oil industry 'What is a major oil company?'

"The usual quick answer is, 'a major oil company is one that is not independent.' The answer to the next question is almost inevitably 'An independent is one that is not a major.' This is usually followed by fidgeting, deliberate lighting of a cigarette, and a stare that indicates the questionee has now met a creature from outer space.

"Occasionally someone will stand hitched to brainstorm this a little further. One of the most refreshing answers was from a substantial 'independent' producer who said, 'A major is anyone bigger than I am that I'm mad at.'"

—R. J. ANDRESS
Executive vice-president
Service Pipe Line Co.

"Automotive economists are warning that the small cars and their lower gas consumption will seriously cut into tax revenues.

"It isn't the small car that's at fault. It is, instead, steadily mounting gasoline taxes, which have forced motorists to look for a way to ease their heavy bite.

"It is these taxes that have been responsible for Europeanizing our cars, for curtailing the production of our wonderful American full-size cars—the proud symbol of our standard of living.

"It's an example of the old truth

Make News . . .

that the power to tax is the power to destroy—or distort."

—NEW YORK MIRROR

"All divisions of our industry are inseparably linked, yet at times there is a tendency for producers, refiners, and marketers to act at cross purposes. But every one of us has the same objective of delivering oil from the ground to the consumer. An appreciation of each other's problems is a fundamental need if the oil industry —every phase of it—is to maintain a healthy status in 1960 and the years ahead. . . .

"Each is dependent on the other. The producer must receive a price for his crude which will provide a profit incentive. The refinery must be assured of a continuing supply of competitively priced crude in order that the manufacturing of the finished products can be profitably conducted in competition with others. Distributors and service station operators must be assured of a stable retail market."

—H. D. MOORE
President
Derby Refining Co.

. . . and Letters

Dear Sir:

Your editorial "The Signal is Bunt, Not Hit-and-Run" [PW—Jul.15'60, p60]is quite definite and factual. It should go further and explain that unless surplus gasoline stocks are cleaned up, which can only occur if the refiners reduce their runs, then the gasoline surplus will be forced on the market at depressed prices, and, in turn, it must depress crude prices.

May I suggest that you air mail reprints of your editorial to the president and chairman of the 100 top refiners. They should all read it again and again and again.

M. LLOYD FREESE
Vice-president
Bell Oil & Gas Co.

PETROLEUM WEEK *will publish each week comments from readers on timely, pertinent subjects. Such expressions are welcome.*

Address all such correspondence to LeRoy Menzing, Editor, PETROLEUM WEEK, *330 W. 42nd St., New York 36, N.Y.*

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INDUSTRY

Oil and gas men are as exacting in pipe quality and dependability as a fashionable woman is in the fine needlework of her apparel or craftsmanship of her jewelry.

Lone Star men are more than steel-workers . . . they are accomplished craftsmen and they make Lone Star casing, tubing and line pipe with the same pride exemplified by a custom jewelist. Lone Star pipe has the quality, the stamina and the finish specified by API.

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THE WHOLE PROFIT PICTURE

When you are drilling, all of your equipment, all of your effort, time and money, in fact, your whole profit picture is framed in one simple operation—rotating the bit on the bottom of the hole. Peak efficiency at this point should be your most important consideration. Weight on bit and mud pressure must be maintained at accurate levels to get the job done with safety and the greatest possible profit.

Four time-tested Cameron products working as a team can help you hold bit efficiency where it belongs—to bring you more hole for less money.

CAMERON MUD LINE PRESSURE GAUGES give exact readings to maintain the hole, produce extra cutting action, efficiently remove cuttings, keep a cooler bit and of course, retain formation pressures.

Ordinary Gauges don't last very long when the service is highly abrasive drilling mud under extreme pulsating pressure. But the self-contained mechanism of the Cameron Gauge with its unique dampening feature, gives steady readings, good visibility and extra long life.

Illuminated models, bronze models for off-shore use and specials are available for any specific requirement.

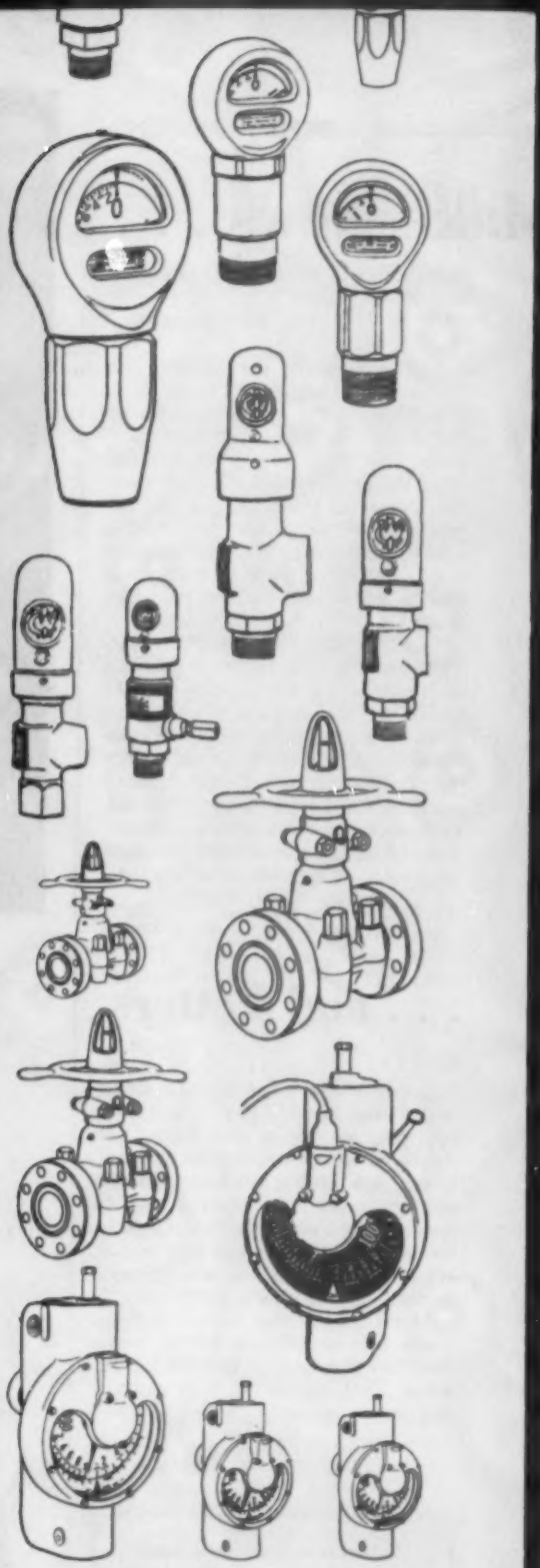
CAMERON SHEAR-RELIEF VALVES protect slush pumps, manifolds and other expensive equipment when overloads occur. These reliable safety valves can be set to any pressure relief. They shear a common nail (U.S. Standard) to give complete protection when destructive overloads threaten—may be re-set in a matter of moments. Any rig hand can choose the right nail with the handy hole chart on each shear-relief valve name plate.

CAMERON "FLEX-SEAL" MUD VALVES give the safest, most economical control of drilling mud—that's why they are the world's most popular mud valve.

Over twenty years after its introduction, the "Flex-Seal" is still the favorite of smart operators everywhere—the valve most often asked for in supply stores—the reason is simple—rugged dependability, long trouble-free service and easy repair.

CAMERON WEIGHT INDICATORS give you a straight-down hole in the fastest time with accurate indication of weight-on-bit. Since there is no hydraulic system temperature changes do not affect readings, there is no possibility of breakdown due to leakage. Like the Cameron Pressure Gauge, dampening of dial motion prevents damage from vibration.

When you are making hole, make the most of your rig time. Keep efficiency, safety and profits right up where they belong. Call your Cameron representative and let him show you the whole profit picture.



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60-Second Summary / WHAT'S HAPPENING IN OIL

AT-A-GLANCE PETROLEUM WEEK Copyright

July 29, 1960

dept/INDEX

Production	22
Pipelines	44
Processing	34
Marketing	46
Washington	18
Statistics	49
The Market Trend	50
Key Prices	53
Editorial	56
International	40
Personals	54
Service & Equipment	48
Petroleum Comments	14

The Republican platform endorses a "reasonable" depletion percentage and it supports a fuels policy study. The drafters did not—as requested—include planks on imports control and exempting gas producers from utility-type regulation. . . . p. 11

•

A new two-in-one rig is helping to cut offshore drilling costs. It permits drilling of one well while completing or working over another. . . . p. 30

•

If world crude price postings should drop, the Middle East would probably be hit first, then Venezuela. The U.S. might be affected in time. The props under world postings appear to be crumbling fast. . . . p. 14

•

Tanker rates may sag more before they improve. There are 367 idle ships now, but another 398 new vessels are on order and will begin to be available soon. . . . p. 50

•

Canada may turn to a quota system to force Montreal refiners to use some domestic crude. The thinking is in terms of 50,000 b/d, which would be more expensive than the imported oil now being used. . . . p. 16

•

A drilling play in west-central Oklahoma, covering more than 400 sq. mi., shows every sign of getting bigger. Most of the activity is focused in Kingfisher County. . . . p. 22

•

The long-life trend in new antifreezes could pose problems for oil marketers. Their main fear: The new products may spell an end to seasonal changeovers. . . . p. 46

•

Venezuela has doubled the initial appropriation for its national oil company. The firm will now have $1.5-million as working capital for fiscal 1960-61. . . . p. 40

•

Secondary recovery by carbonated waterflooding may be tried out in Texas this fall. A three-company team has asked Texas Railroad Commission approval for the Pecos County project. . . . p. 26

•

The steel industry is complaining that rust-preventive oils aren't satisfactory. They want an oil free of unsaturates, which refiners say would be too expensive. . . . p. 34

•

Phillips Petroleum Co. may throw in the towel on exploration in Jordan. It has spent $7-million for six dry holes. . . . p. 42

Up to the Minute / SIGNIFICANT LATE NEWS

July 29, 1960

Gulf Coast cargo prices of gasoline advanced another ¼¢ a gal. this week, the second such increase this month. The pattern was the same as last July, when Gulf Coast prices moved up ½¢ a gal. in two jumps. The current cargo lows range from ⅛¢ to ¼¢ a gal. above a year ago.

The upward movement of prices reflects a strong demand for gasoline, despite continued high refinery runs and heavy motor fuel output. Current indications are that gasoline demand for all of July will reach a new peak (page 49).

•

West Shore Pipe Line Co. has been formed to build a proposed 10- and 16-in. products line from East Chicago, Ind., to Green Bay, Wis. While many details are yet to be worked out, approximately ten companies marketing in the area north and west of Chicago may participate in ownership. The projected route would be by way of Des Plaines, Ill., and Milwaukee. The line has been in the planning stage for more than a year. Previously such a line had been considered uneconomic in view of lake transit competition.

•

High operating costs and the global surplus of crude have prompted two companies to change their minds about Alaska. Humble Oil & Refining Co. at one time had employed as many as 20 persons in Alaska, is pulling out all but one man of the present 12-man staff by November. BP Exploration Co. (Alaska) also is curtailing its Alaskan operations.

•

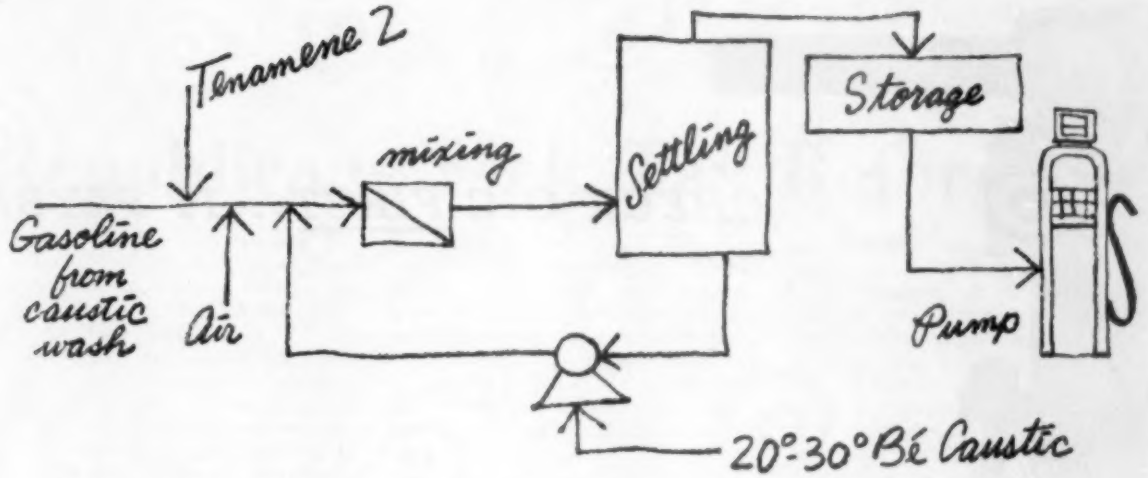
Gas utility and transmission companies are spending a record-breaking $2.2-billion dollars on construction and expansion this year. The American Gas Assn. estimates that 1960 expenditures will top the 1957 peak by 26%. The association's four-year forecast indicates expenditures will slump somewhat in 1961 and 1962, but will rise in 1963 to another peak of $2.3-billion. Transmission lines account for almost one-half of this year's expansion expenditures, and will do so again in 1963, AGA says.

•

A flare-up over an extra 10¢-per-bbl. cargo levy at Basra port threatens to disrupt crude exports from Iraq's southern fields. Loadings were continuing at midweek, but the refusal of Iraq Petroleum Co. to pay the additional levy may bring the matter to a head shortly. The levy was imposed by Basra port authorities. Exports through Basra averaged 250,000 b/d during the first half of this year, out of the country's total production of 930,000 b/d.

•

First-half earnings of Standard Oil Co. (N. J.) were unchanged from last year, at an estimated $315-million. The company grossed slightly more this year, $4,317,000,000 compared with $4,255,000,000 in 1959. Gulf Oil Corp. had a 10.1% gain in net, to a total of $156.1-million, while Shell Oil Co.'s first half income was just over 1959 at $69.3-million. Indiana Standard's earnings dipped 17.7% to $64.9-million.



For gasoline stocks that respond, the economy and simplicity of Tenamene 2 inhibitor sweetening can seldom be equalled by any other treating method

In the presence of caustic and oxygen, Tenamene 2 catalyzes the conversion of mercaptans to disulfides. Being insoluble in caustic, it remains in the gasoline stream to effectively inhibit the formation of gum in the finished gasoline. Thus, it both sweetens and inhibits in essentially one operation.

Tenamene 2 inhibitor sweetening is primarily of interest to processors of catalytically-cracked gasoline. The response of sueh gasolines to the inhibitor sweetening method can be quickly determined by the following test:

1. Using sour gasoline from the primary caustic scrubber or mercaptan removal unit, put 700 ml. into each of several one-quart bottles.
2. To one group of samples, add Tenamene 2 at a rate of 5 pounds/1,000 bbls. (14.25 mg./liter). To another, add 10 pounds/1,000 bbls. (28.52 mg./liter).
3. Add 10 vol. % of 15° Baumé caustic to each sample.
4. Stopper the bottles, shake thoroughly. Replace stoppers with notched corks and store samples in a dark place at room temperature.
5. Examine at 3-hour intervals and determine the time required for sweetening.

If the results of this test indicate Tenamene 2 inhibitor sweetening to be effective in treating your sour gasoline, we will be glad to aid you in making a detailed study of your sweetening and stabilization requirements. In this study we will help you determine the optimum processing values for your particular operation, including inhibitor concentration, caustic strength and proportion, acid oil content, process temperature and reaction time. For an evaluation sample of Tenamene 2 and more information on the Tenamene 2 inhibitor sweetening method, write or call your Eastman representative, or write to Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company, Kingsport, Tennessee.

Basic Procedure for Tenamene 2 Inhibitor Sweetening
(see sketch)

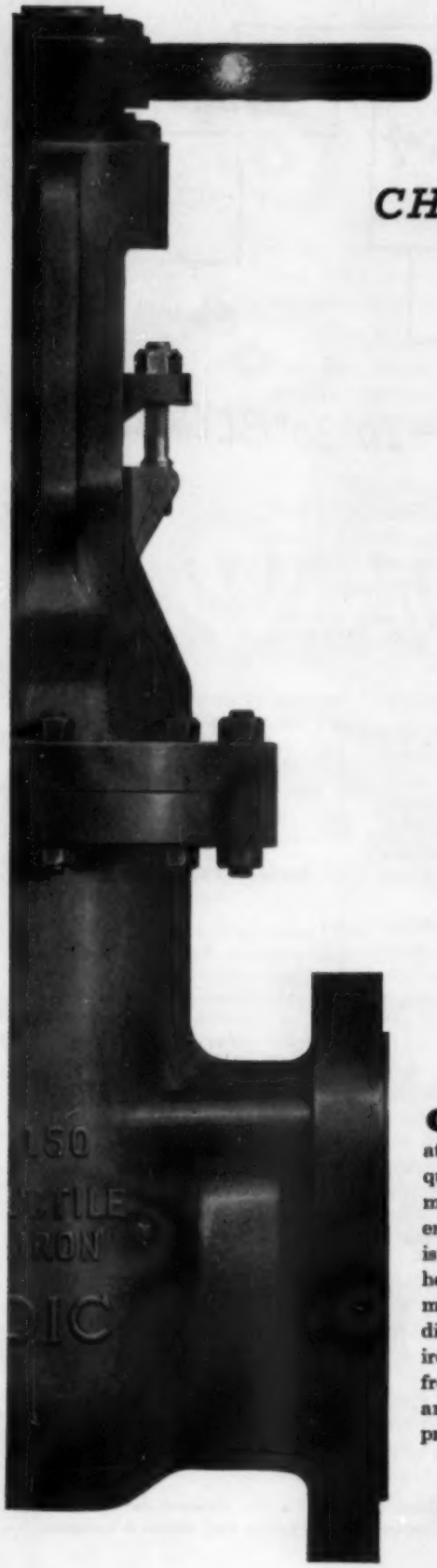
The sour gasoline is washed with 10-15° Baumé caustic. Between 5 and 15 pounds of Tenamene 2 is added per 1000 barrels of hydrocarbon. A small quantity of air is injected into the stream and the gasoline contacted with 20°-30° Baumé caustic. The gasoline is allowed to settle, then pumped to storage. If not already sweet when it goes to storage, the gasoline should sweeten within a few hours after storage.

Tenamene 2 inhibitor sweetening is, in almost every instance, more economical than doctor or copper chloride sweetening. Unlike doctor treating, no regeneration step is necessary, and there is no reduction in tetraethyl lead response. Unlike copper chloride treating, Tenamene 2 inhibitor sweetening does not allow the possibility of gum-catalyzing, copper contamination.

Most refineries find that minor modification of existing procedures enables them to adopt this method.

Tenamene 2
an Eastman gasoline additive

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Boston; Chicago; Cincinnati; Cleveland; Detroit; Greensboro, North Carolina; Houston; Kansas City, Missouri; New York City; Philadelphia; St. Louis. **West Coast: Wilson & Geo. Meyer & Company,** San Francisco; Denver; Los Angeles; Phoenix; Salt Lake City; Seattle.



CHECK OIC FIRST...IT PAYS!

QUALITY and a reputation for quality are not easily attained in the valve business. At OIC we've worked for more than three-quarters of a century, with one unbroken chain of ownership-management, constantly guarding our standards of quality in materials, design, engineering, craftsmanship, and inspection. This long-standing reputation is reflected in the caliber of your nearby OIC distributor . . . a "quality house" with its own highly valued reputation. When you need valves and must be certain of quality, sight unseen, it will pay to phone your OIC distributor. He carries a representative stock of OIC bronze, iron, ductile iron, cast and forged-steel valves . . . and he can get 4 to 5-day delivery from OIC's warehouses or factory inventory. Since quality is a "must," and delivery is urgent, phone your OIC distributor. Quality products and prompt service are his business, and ours.

OIC VALVES

FORGED AND CAST STEEL, BRONZE, IRON AND DUCTILE IRON VALVES

THE OHIO INJECTOR COMPANY • WADSWORTH, OHIO

Republicans Seek Tax Reforms

The Republican Party renewed its support of "reasonable" depletion percentages this week, a position in direct contrast to that of the 1960 Democratic platform pledge.

The 1960 GOP platform statement adopted in Chicago is almost the same language as used in 1956 on percentage depletion for minerals and metals.

The platform pledges "continued support for federal financial assistance and incentives under our tax laws to encourage exploration for domestic sources of minerals and metals, with reasonable depletion allowances."

The Democratic platform, adopted two weeks earlier, describes percentage depletion among "the more conspicuous [tax] loopholes . . . which are inequitable . . ."

The Republican platform writers did not deal at any length with the percentage depletion issue. The natural resources subcommittee, headed by Rep. Melvin Laird, of Wisconsin, heard considerable testimony on the need for maintaining the 27.5% provision for oil and gas producers from F. J. Blaise, an official of Pure Oil Co., who represented the American Petroleum Institute and the Mid-Continent Oil & Gas Assn.

The Republican platform says the "tax structure should be improved to provide greater incentives for economic progress."

The party favors "broadly based tax reform to foster job-making and growth-making investment for modernization and expansion, including realistic incentive depreciation schedules."

Both parties support some form of a fuels policy study, a demand being pushed by coal interests.

The language of the 1960 GOP platform is: "Minerals, metals, and fuels call for carefully considered actions in view of repeated failure of Democratic-controlled Congresses to enact any long-range minerals legislation. Republicans, therefore, pledge long-range minerals and fuels planning and programming, including increased coal research."

The Democratic platform is more specific: "We support the establishment of a national fuels policy . . . and pledge immediate efforts toward establishment of a realistic policy."

Both party statements constitute something of a rebuff to the oil industry's position on competitive fuels.

Oil's position on the matter was outlined to the Republican platform subcommittee by William J. Goldston, president of Goldston Oil Corp., Houston, who explained:

Any federal intervention via a formalized fuels policy must inevitably tamper with free competition, and would point toward end-use controls in the name of "most productive economic use." The current national policy, he continued, is "correct and sound"—that is, to allow free competition between different forms of fuel and to encourage research to overcome disadvantages of the so-called "inferior fuels."

Neither party's platform addresses the petroleum imports situation directly.

The Democrats promise expanded world trade and reject rising pressures for "protectionism." And the GOP pledges a reduction of "unjustifiable barriers" to trade.

The Texas Independent Producers & Royalty Owners Assn. had specifically asked the GOP platform writers for planks on imports and on legislation to free gas producers from utility-type controls.

TIPRO recommended that the Republicans endorse steps to force down the volume of oil imports and to "reduce the competitive advantage of foreign oil."

It also wanted the GOP to go on record in favor of freeing independent producers from Federal Power Commission regulation.

Phillips to FPC: Get to Work

Phillips Petroleum Co. told the Federal Power Commission this week that it's time to get down to work on producer prices and stop dilly-dallying.

Specifically, Phillips said FPC should state just what cost evidence producers must submit to support prices proposed in contracts.

The company objected to the practice of permitting utility intervenors in rate cases simply to cite the U.S. Supreme Court decision of more than a year ago that sent the CATC gas case back to the commission for more evidence.

Phillips said FPC is putting the burden of proof for initial prices on producers without defining what producers must prove.

Phillips took this position in supporting Transcontinental Gas Pipe Line Corp.'s request that FPC reaffirm its original opinion approving sales of offshore Louisiana gas produced by the Continental-Atlantic-Tidewater-Cities Service group on that basis of the present record in the case.

The group is now involved in new hearings before FPC to substantiate a price of 21.4¢ (plus tax).

"Producer applicants have spent and are spending hundreds of thousands of dollars . . . only to be met time after time with a blank wall of contention that they have not sustained the burden of proof," Phillips said.

And it added: "They're not furnished any standard of information as to what the proof should be."

Phillips—whose landmark rate decision has been hanging fire since the Supreme Court ruling in 1954—argued that the CATC case does not require cost evidence.

Phillips also challenged the statement of Supreme Court Justice Tom Clark in the CATC case "that 90% of all commercial gas moves into the interstate market."

Said Phillips, "It is common knowledge . . . that nearly one-half of all gas produced is consumed in the states where it is produced."

It is regrettable, Phillips added, that "Justice Clark's misstatement is now being quoted and referred to by others as a fact."

First-Half Profits Both Up and Down

Most oil companies reporting on first-half earnings agree that the outlook for the last six months of 1960 is brighter.

First-half earnings were generally mixed, with several companies posting impressive gains, and others showing slight declines. Many companies attributed the declines to depressed price conditions in the first quarter. Continental Oil Co., for example, said the principal factor contributing to its 2.4% drop-off in earnings was "a materially lower average price for many petroleum products."

Most of the optimism can be attributed to recent strengthening in the prices of petroleum products.

"Recent increases in refined product prices, and other operating improvements," says Delhi-Taylor Oil Corp., "indicate that earnings for 1960 should be significantly greater than originally forecast." And Tidewater Oil Co. cites "more favorable marketing conditions."

Anderson-Prichard Oil Corp. pointed to "a severe softening of the price structure of gasoline" for its depressed earnings.

But it adds that this was corrected in the latter part of the second quarter, and that, "It is anticipated that earnings for the two remaining quarters of this year will be greatly improved."

Phillips Petroleum, whose first-half earnings were 2.8% below last year's, also expects a hike in last-half earnings to boost profits for the year above 1959.

Boxscore of Oil's 1960 Earnings

(in thousands of dollars)

Company	First Quarter Net Income	% Change 1960-1959	First Half Net Income	% Change 1960-1959
Anderson-Prichard	$ 1,352	+ 0.3%	$ 2,167	−28.8%
Commonwealth	331*	.....	1,048	.....
Continental	15,280	+ 2.5	28,500	− 2.4
Creole	.....	.....	100,600	−12.9
Delhi-Taylor	1,400	−44.0	2,150	+48.3
Imperial	.....	.....	30,686	+31.5
Phillips	25,804	− 0.1	51,748	− 2.8
Socony	47,200	+ 4.4	83,400	+ 8.2
Texaco	97,313	+ 3.7	177,342	+ 7.5
Texas Pacific	2,104	+ 4.1	3,968	+ 9.0
Tidewater	5,932	−43.3	18,277	− 1.9

*Loss.

Onetime Roustabout Joins FPC

Bad times for the oil business are familiar to Paul A. Sweeney, 65, newest member of the Federal Power Commission, for they caused him to leave private practice in Tulsa in 1924 to become a career government lawyer.

While in high school, Sweeney earned spending money in the oil fields of Oklahoma, a practice he continued during his vacations throughout college and law school.

"I was a roustabout when 1,000 ft. was a deep well, and there was no natural gas business to speak of," he recalls.

He might have become an oil industry lawyer, for he began practice in Tulsa after graduation from Georgetown University Law School in 1921. But after three years, "depressed conditions" in the industry led him to leave for Washington "for some first class legal experience."

His Washington background includes the Civil Service Commission, the State Dept., and 30 years at the Justice Dept.

He had been first assistant in the Justice Dept.'s Office of Legal Counsel for two years when President Eisenhower named him to the FPC last spring.

Since the Office of Legal Counsel acts as a lawyer to FPC and other agencies when their decisions are appealed to the federal courts, Sweeney has worked on many FPC cases in the natural gas and electric power fields.

Sweeney says that as a Justice Dept. attorney he sometimes found himself working hard in behalf of FPC decisions he didn't agree with. Now he welcomes the chance to get his own views into the opinions.

He approaches his new job "with no prejudices as to how to regulate," and says, "I have no preconceived notions about gas industry economics."

But, he adds, Congress and the courts have made the decisions to regulate the gas industry, including producers, and he intends "to regulate them impartially."

"Ultimately," he says, "the public interest controls" in regulation. But he doesn't think the public interest means solely "the lowest rates for consumers."

As he wound up his first week in office last week, Sweeney said he had been reminded of "a rushing period in college."

Though still without a fifth member (to replace William R. Connole), the commission is in a much stronger position with Sweeney in office.

Some matters, particularly those involving the sale of securities, demand quick commission action. No action is legal without three members. Thus, the unavoidable absence of one of the three could have had costly consequences.

Sweeney's appointment was to fill the unexpired term of the late John B. Hussey, ending in June, 1963.

Politics, however, may end Sweeney's term early in 1961.

This is because Senate Democrats have refused to confirm Sweeney's appointment, so that if their party wins the White House in November, Kennedy can name his own man.

If the Republicans win, however, there would be no further advantage in delay for the Democrats.

Sweeney says he has no promise from Vice-President Nixon to reappoint him after next June if Nixon becomes President.

But this uncertainty hasn't dulled Sweeney's enthusiasm for his new post, or for trading work as a lawyer defending the cases of others for a judicial role where he can make up his own mind.

Residual Suppliers Urge Quota Hike

East Coast consumers were warned this week that shortages of residual fuel oil can be expected this winter unless the fourth-quarter import quota is boosted "at least 29%."

That's the minimum needed to stabilize residual demand at the existing level, the Petroleum Industry Research Foundation, Inc., reported in a fresh analysis of the current outlook.

The foundation is a nonprofit research group, whose support comes primarily from some major oil companies and East Coast fuel oil jobbers.

"If stocks fail to increase adequately in the fourth quarter, a residual oil shortage must be expected in the first quarter of 1961," the report said.

"It would be extremely difficult to meet demand during this peak period out of current supplies."

The recommended import quota for the fourth quarter was placed at 560,000 b/d, an increase of 126,000 b/d over last year.

It includes 55,000 b/d for stock accumulation during the fourth quarter, in anticipation of the normal inventory reductions that take place from January to March.

East Coast resid supplies are tight now, and are bound to remain that way until the end of September, the study asserted.

Sharp advances in Gulf Coast cargo and New York barge prices in mid-July—unusual for this time of the year—are evidence of this development, it noted.

The contraseasonal advances, the foundation reported, will cost East Coast consumers $20-million to $25-million for the remainder of this year, but will not bring forth additional volume.

Any shortage would have "grave consequences" for the East Coast, since residual oil accounts for one-fifth of all heating fuels, the analysis pointed out.

"Substitution of other fuels, in cases of insufficient residual oil, would be limited," the analysis said.

"In practice, only about 40 power stations, plus a few large industrial plants, with multiple burning facilities, can change to other fuel sources."

The great bulk, therefore, goes to consumers who cannot readily switch.

The federal government is the controlling factor, the foundation pointed out.

"It is well to recognize that, like every government action, the setting of fuel oil import quotas is a political act, particularly in an election year," the study declared.

"It should also be recognized that those who favor low quotas—the domestic coal and oil producers—are well informed, well organized, and vociferous."

Texas Gulf Refiners Show Largest Gain in Runs

A quick look at July refinery runs shows that the bulk of the increase in volume over last year originated in the Texas Gulf.

Crude throughput in that district is averaging 1,963,000 b/d so far this month, an increase of 331,000 b/d, or 20.3%, from last July.

For the nation as a whole, runs are up 375,000 b/d from July, 1959, averaging 8,277,000 b/d.

Compared with February of this year, the last winter month that runs exceeded 8-million b/d, July's total refinery runs scored a gain of 226,000 b/d, with the Texas Gulf again responsible for the lion's share, or 175,000 b/d.

Large increases in crude throughput also occurred in the Midwest and in the Oklahoma-Kansas-Missouri refinery district.

Runs to stills in Indiana-Illinois-Kentucky are up 79,000 b/d from a year ago, while Oklahoma-Kansas-Missouri accounted for 44,000 b/d of the 375,000 b/d increase over last July.

The only other area showing substantial volume gains in runs was Arkansas-Louisiana Inland, with an increase of 39,000 b/d over last year.

While runs were pushed up throughout most of the nation, East Coast refiners cut theirs 66,000 b/d—a surprise to many who tend to point a finger at eastern refineries when throughput climbs.

July runs on the East Coast are averaging 1,151,000 b/d, down 5.4% from last year. Moreover, it was the only district to trim throughput appreciably—53,000 b/d—from the previous high in February.

On the West Coast, runs are down 31,000 b/d from July, 1959, but up 11,000 b/d from February of this year.

Similarly, while throughput is down 28,000 b/d from year ago levels at the Louisiana Gulf, it is 51,000 b/d higher than four months ago.

RUNS TO STILLS

District	Barrels Daily July, 1960	% Change from Year Ago	% Change from Feb. '60
East Coast	1,151,000	— 5.4%	— 4.4%
Appalachian #1	98,000	+ 5.4	— 2.0
Appalachian #2	108,000	+ 1.9	+ 0.9
Indiana, Illinois, Kentucky	1,486,000	+ 5.6	+ 0.6
Minnesota, Wisconsin, North & South Dakota	125,000	+ 8.7	+ 9.6
Oklahoma, Kansas, Missouri	743,000	+ 6.3	— 1.5
Texas Inland	310,000	+ 2.3	+ 6.5
Texas Gulf	1,963,000	+20.3	+ 9.8
Louisiana Gulf	693,000	— 3.9	+ 7.9
Arkansas-Louisiana Inland	108,000	+56.5	— 1.8
New Mexico	28,000	+ 3.7	+16.7
Other Rocky Mountain	310,000	— 5.5	+ 4.4
West Coast	1,154,000	— 2.6	+ 1.0
Total U.S.	**8,277,000**	**+ 4.7**	**+ 2.8**

Prices: Last Straw on the Camel's Back?

If world crude oil price postings do drop—for the reasons outlined in this column last week—chances are that the break may occur first in the Middle East, then spread inevitably to Venezuela, and perhaps, in time, also indirectly affect the United States.

The Middle East is the most likely point to crack first for the reason that the whole validity of the present posted price level has been brought into sharpest focus there.

The drama has been unfolding across the Arabian Sea in India during the past few weeks: First, Russia's publicized offer to India of crude oil (and products) at prices well below Middle East levels. Then, India's notice to the three refineries owned by Caltex, Shell, and Standard-Vacuum either to use this cheaper Russian crude, or to import their own Middle East crude at "more competitive" levels. And finally, last week, the decision of the major supplying companies to reduce their delivered prices for Middle East crude to these wholly owned Indian refineries.

The Indian lesson is not likely to be lost on the governments of other consuming countries.

Practically the only crude left moving today in international trade at full posted prices is from major suppliers to their own affiliates. Just about all the rest—whether sold to independent refiners, to government purchasers (e.g., Argentina and Brazil), or to partially owned affiliates (e.g., Japan and Italy)—is moving at discounts off posted levels.

Obviously, if crude prices are now lowered to wholly owned affiliates, the last important prop under present crude postings will be gone.

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Russia's dramatic cut-price offer to India undoubtedly has brought this particular issue to a head. And no doubt Russia will continue to bring it to a head in many other places—as witness its bids to Cuba, Japan, Italy, Brazil, and so forth.

This is not to say that Russian oil alone is creating the problem. It is just one extra depressant in a market already thoroughly undermined by ever-increasing discounts, on ever-increasing volumes of oil.

What Russia is doing is simply adding the final straw that may break the camel's back, and topple the whole Middle East posted price structure.

* * * *

If posted prices do break in the Middle East, the cut is bound to spread to Venezuela, the world's other major crude export center.

For Venezuelan postings are even further out of line with market realizations than the Persian Gulf. At the U.S. East Coast, for instance, Venezuelan crudes are some 30¢ to 50¢ above parity with Middle East crudes (for roughly comparable grades) at current tanker rates—and in Western Europe, of course, are even further out of line.

Current discounts off Venezuelan postings are also twice as steep as in the Middle East—75¢ to 80¢ per barrel off postings in Venezuela as against 20¢ to 35¢ at the Persian Gulf.

And the volumes of Venezuelan oil affected by discounting are also very large: Witness the recent statement of Creole, Venezuela's biggest producer, that it is discounting "two-thirds" of its entire production.

* * * *

The question of what would happen to U.S. crude postings is much more "iffy."

True, current U.S. postings have little direct link, as such, with overseas levels. But the U.S. policy of alloting import quotas to all refiners, and allowing them to "swap" their quotas for domestic crudes at lower prices, does provide some connection. For it means that some 200 U.S. plants are affected, directly or indirectly, by prices of imported crudes.

Much will depend on the state of the U.S. crude market itself. If it is weak (it is weak now, but is strengthening), a reduction in imported prices could prompt domestic buyers to reduce postings.

* * * *

If crude postings do break in the Middle East and Venezuela, one big question is this: Will it have any effect in cleaning up the situation that brought it about—i.e., widespread discounting by everyone, including major suppliers?

The size of the cut, of course, would be a factor. Generally, the sharper the drop, the less the remaining profit producers can "give away" in discounts.

But one thing is certain, regardless of the size of the cut: It certainly won't eliminate discounting altogether. A certain amount of discounting always goes on (especially by sellers without outlets of their own). And with the magnitude of today's surplus, there's little hope that the present dog-eat-dog fight for outlets will disappear in the foreseeable future.

Nor does anyone really expect refined products prices to strengthen in many of the highly competitive markets in Europe and other foreign areas.

Thus, the best guess is that unless crude postings are slashed to an unexpected degree, a good deal of discounting could be expected to continue. However, several international marketers believe that the new discounts would be less severe and somewhat less wide-

spread, and that refiners might not have to give away all the benefit of a lower crude price in the form of lower product prices.

* * * *

At the same time, there is growing conviction in top oil circles that the practice of allowing postings to stand when they are as widely discounted as today is itself a demoralizing factor.

In other words, this fact alone is breeding sharper discounting than would otherwise occur.

Here's how one key oil executive puts it:

"The longer a phony posted price stays, the more likelihood that people who want to cut prices will feel safe in quoting a discount for a period of time ahead. If they were not sure postings would stay at their present levels, they'd be much more hesitant to quote a sizeable discount for any length of time.

"Secondly, when you have such widespread discounting, you no longer know what the true level of market competition is. You have to resort to the most involved kind of commercial intelligence to find clues to what your competitors all over the world are up to—and you're still never really certain.

"This is important because the more chaotic the market gets, the more likely you are to undershoot it. If you think maybe you have to give 50¢ off, but are not really positive, you tend to bid 60¢ off just to be safe—when maybe all you needed to give off in the first place was 45¢.

"In short, the more the uncertainty, the deeper the discounting; and the deeper the discounting, the more the uncertainty. It's a vicious circle.

"If we showed more realism in keeping posted prices somewhere more in line with the actual market, the tendency to discount by such large amounts, and in such large volumes, would be considerably lessened. This may be bitter medicine, but in the long run it might help the patient."

* * * *

Another effect of an unrealistic posted price, many oil men point out, is that it has tended to induce newcomers to enter the international field under the illusion that the overseas crude profit was considerably fatter than it really is.

"Would all those newcomers have paid such huge bonuses for new concessions several years ago if crude postings had been, say, 40¢ a barrel lower at that time?" asks one newcomer. "Especially if they also realized that postings might go lower still?"

Comments another: "This ossification of Middle East postings has done a lot of harm. Not only has it directly stimulated the present surplus by encouraging too many newcomers, but it has also obscured for producing countries a true realization of the world market. This has tended to encourage them to build their budgets and financial plans on an obviously unsound basis."

The question of the budgetary needs of the producing countries is, in fact, the main dilemma facing the industry.

No one is unmindful of the political repercussions of a price reduction in Middle East and Venezuela. The anger in both areas when Middle East postings were reduced 18¢ in early 1959 is still a fresh memory.

But that was the first cut in Middle East postings in history—and was so unexpected it caught the governments entirely by surprise.

Now, however, it should be obvious to any governments that have kept themselves informed on the general trends in the oil industry that the market has been deteriorating badly in the last few months.

Moreover, the picture is not entirely bleak for the Middle East. Production is rising sharply—up 13% in the four main Middle East producing countries in the first half of this year compared to year-earlier levels. This should cushion the blow considerably. And all indications point to a further rise in output next year, perhaps on the order of another 8%.

Venezuela presents a more somber production picture. Output there is not expanding, largely because increased tax, labor, and other costs have reduced the ability of Venezuelan crudes to stay competitive. Production this year is not expected to show much change from 1959, nor to grow perceptibly in the next few years.

On the other hand, a cut in posted prices would not hit Venezuela's oil revenues nearly as directly as the Middle East's. This is because taxes in Venezuela are paid on producers' actual realizations, while in the Middle East the 50% profit-sharing tax is based on the full posted price (with all discounts coming out of the companies' 50% share).

* * * *

One problem is the fact that most producing governments are not knowledgeable—or realistic—about world marketing.

Their main argument against a price cut usually runs something like this:

"The oil companies are only initiating these cuts to take the profit away from us. When they have to give a reduction to a third party, we might allow it. But when they cut the price to their own affiliates, they're merely reducing the price to themselves at our expense."

This argument ignores the realities of the current situation. For instance, when a supplier charges full posted crude price to an affiliate in another country, that affiliate still has to be competitive at the refined products level. And if he has to compete in his market with other refiners who are getting their crude at substantial discounts off postings, the affiliate ends up operating at a loss. This, in fact, has been the case in many areas for several years now (see, for example, the

continued ▶

PETROLEUM COMMENTS

(continued)

report on page 42 on losses in the German market).

Obviously, the governments of consuming countries are not likely to accept such a continuing tax loss as a permanent situation. Nor—as witness India—are they likely to continue paying out extra foreign exchange to affiliates if competitive crude prices are demonstrably lower.

* * * *

Then, too, the whole concept of charging affiliates the posted price, while giving third parties a discount, is breaking down for another reason.

The trend today is to form new refining affiliates in various countries with local participation—either jointly with the government or with other local interests.

This is already true in Japan and Italy. And note the large number of new refining projects which provide for local participation—as in Spain, Pakistan, the Philippines, Morocco, Tunisia, etc.

This is changing the "affiliated" picture considerably. When a refinery is wholly owned, an integrated company—theoretically, at least—can look at the over-all picture, and perhaps take a refining loss for a period of time in one place to offset a crude profit elsewhere.

But when the refining affiliate has outside local participation, it obviously has to stand on its own feet profitwise.

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Here's how one top executive sums up the picture:

"If the present world surplus could be straightened out within a couple of years, I'd be for holding the postings, if only not to upset the producing governments in the interim. After all, we've sweated out temporarily upset market conditions before.

"But the situation today is different: The oversupply is far greater and will be with us for a far longer period, than before. And more people are involved in it who don't know how to live with it.

"I don't see how the present fictitious postings can endure much longer. It's only a question of when."

Quota System Eyed by Canada as Spur for Domestic Crude Output

The Canadian government is thinking of imposing domestic crude quotas on Montreal refiners, an action that producers in Alberta and Saskatchewan have sought for more than a year.

Well-informed sources in Ottawa say this is one of several steps that the government is contemplating in a hurry-up attempt to bolster Canadian producers.

Also, there are reports that the government may discuss the possibility of shutting off all imports of foreign crude into Ontario.

These reports also indicate that the government may consider setting up an artificial line in eastern Ontario, west of which only Canadian crude and products would be marketed.

Although nothing is definite, trade talk indicates that Montreal refiners may be obliged to take 15% to 20% of their crude requirements from Canadian producers.

Based on present refining capacity of 265,000 b/d in the Montreal area, industry sources believe government thinking is in terms of about 50,000 b/d of domestic crude as the possible quota.

Nearly all of the crude for Montreal refineries is imported from the Middle East, Trinidad, and Venezuela, with the latter source supplying more than 50% of the needs.

Should the Montreal refineries have to trim imports to make room for domestic crude, it would mean that the foreign oil would have to seek outlets elsewhere in the already saturated international markets.

A rush study of the Canadian oil situation is under way, covering not only marketing policies, but also refinery margins, export-import policies, and proration practices in western Canada.

This is being spearheaded by Canada's National Energy Board, at the request of Trade Minister Gordon Churchill. The board is updating the statistics and other data contained in last September's Borden Commission report (PW—Sep.4'59,p11).

Creation of the board was one of the recommendations of the Borden Commission, which studied the Canadian oil industry for more than a year.

Churchill emphasized the urgency of the situation with a statement to the House of Commons that he is going to give it priority treatment as soon as Parliament completes its work.

Imposition of a quota system for western Canadian oil in the east would require a solution to two more problems: transportation to Montreal, and some determination of the delivered price of domestic crude.

Western Canadian crude moves as far east as Toronto—350 mi. short of Montreal—through the Interprovincial-Lakehead pipeline system.

Trans-Northern Pipe Line Co. operates a 10-in. products line from Montreal to Toronto. There is some speculation that, if necessary, the line could be switched to crude and the direction of flow reversed.

During the Borden Commission hearings in early 1959, western producers had urged government support for a 2,000-mi. pipepline direct from Alberta to Montreal. Their argument was that such a line would be economically feasible, a view that was contested sharply by the major companies operating refineries in Montreal.

The refiners in Montreal maintain that western Canadian crude cannot compete in their plants with imported oil unless postings for domestic oil are reduced, or prices of products increased in eastern Canada.

The competitive disadvantage of western Canadian oil in Montreal (assuming it could be delivered by existing pipelines) amounts to at least 25¢ a bbl., according to industry estimates.

Should the government step in, it would be assuming the task that had been assigned to the Borden Commission more than two years ago.

The net results of the protracted studies by the commission, composed of leading Canadian citizens, were recommendations that substantial volumes of gas be exported to the U.S., and that oil companies attempt to find markets for crude to boost Canadian production to 700,000 b/d by the end of 1960.

Earlier this year (PW—Apr.8'60, p23) the government approved permits for the export of 1-billion cf/d of gas to the U.S.

While Canadian crude output now is running about 9% over last year, the most optimistic estimates are that it will only reach 600,000 b/d by the end of the year, 100,000 b/d short of what producers had hoped for.

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Looking Ahead in Washington

McGraw-Hill
Washington
Bureau
July 29, 1960

The Interior Dept. is displeased with the method of allocating residual fuel oil imports, but can't find a better system. Under Secretary Elmer Bennett, the department's strong man on oil imports, now frankly acknowledges this situation. Bennett has admitted to protesting New Englanders that the present allocation plan has been a thorn in his side almost since the start of the mandatory program. "If anyone has any ideas for a better system, I'd like to hear them," he says.

Officials say they are constantly searching for an improved method. Interior came closest to adopting a change early this year, when a plan correlating residual imports with marine terminals was under consideration. But because the terminals hold too many other oil products, the idea was abandoned. With regret, Interior continues handing out residual allocations on the basis of 1957 imports: Companies are held to approximately the same percentage of fuel oil they imported into Districts I-IV in that year. The allocation system has brought heated protests, particularly from companies which did not import residual in their own name in 1957, and from importers whose business boomed in later years.

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Government policy-makers want somehow to avoid "economic control" of residual price and supply by a few importers. Bennett sent a New England delegation protesting the recent 15¢-per-bbl. residual price increase to the Office of Civil & Defense Mobilization for talks on prices, but agreed with the group that Interior's allocation method plays an important role in price, supply, and distribution. He said—in the most candid public revelation made by an Interior officer on the residual problem—that he wants to revise the system to prevent "customer-stealing" and "price discounts by 30% and 40%."

At the request of the New England Council, OCDM will review its finding that residual oil imports should be restricted. But top OCDM officials don't expect the review to convince them of the necessity for a change. The New England Council, representing industrial groups including oil distributors, was told that several such special reviews have been made in the past year, but none have altered the residual restrictions.

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The conventions are over and Congress regains the spotlight. The Senate will resume its session on Aug. 8. The House, which doesn't have so much work left uncompleted, won't return until a week later.

There will be election-year attempts to embarrass both political parties—and petroleum issues could get involved. For example, Sen. John J. Williams (R., Del.), still toys with the idea of offering another depletion-cutting amendment. Some Republicans would like to see the issue come up, because a majority of Democrats have voted against reduction from 27.5%, and the Democratic platform contains an implied promise of a cut.

A decision on minimum wage coverage for service station employees will be made in Congress' August session. House-Senate conferees will try to iron out their differences. The intent of the House version was to omit service station coverage, but some lawyers say the bill's fuzzy language might have the opposite effect. The Senate bill would limit the wage minimum to stations and other retailers grossing more than $250,000 a year.

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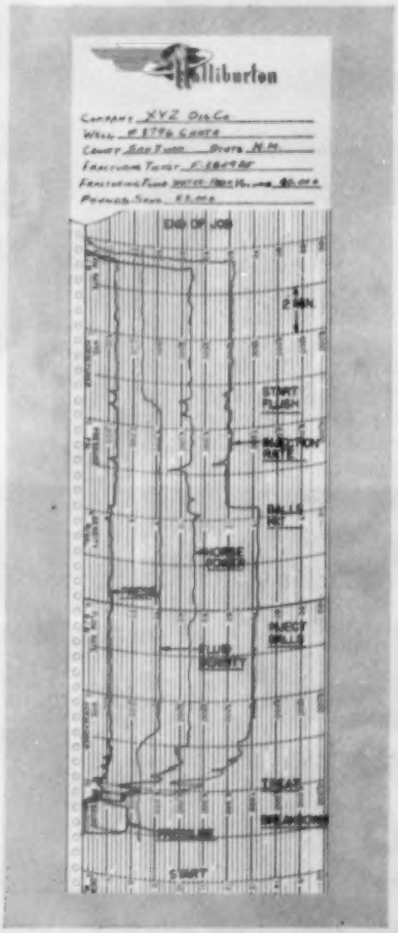

HERE'S HOW IT WORKS!

Halliburton's new *FRACOMETER* is a pneumatic instrument providing remote indication and recording of flow rate, wellhead pressure and hydraulic horsepower during fracturing. The DENSOMETER reports ratio of sand to fluid in terms of total fluid density.

HERE'S WHAT IT DOES!

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Many major companies as well as independents have made exhaustive field tests to determine the value of the Fracometer/Densometer Instrument Team. Over 100 successful job performances have led customer after customer to express their complete satisfaction with its operation and accuracy. On your next fracturing job, specify Halliburton's advanced AUTO-FRAC* and *see* the results yourself *as they are being made.*

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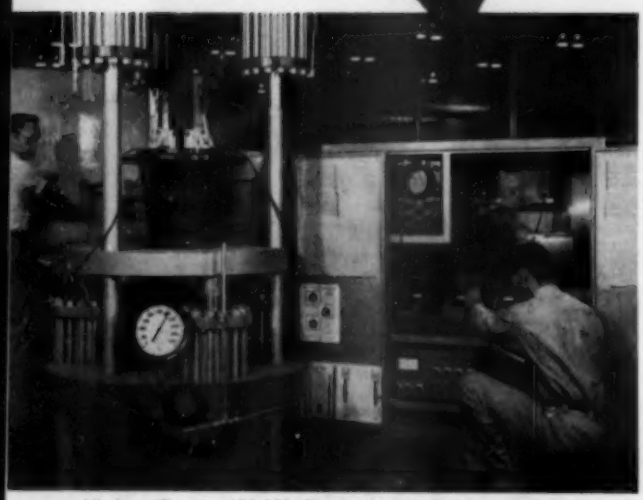
MODEL 60



Mission Slips in 600,000 lbs. capacity slip test machine, with fourteen channel recording oscillograph measuring strains in slips and pipe.

Field and laboratory tests proved that these slips are built like a bridge with plenty of strength but no excess weight. They weigh only 135 pounds; so you won't break your back setting them. Yet, they have all the heavy-duty features you will ever need. You can hold drill pipe with hook loads of 275,000 lb. and drill pipe sizes 2⅜" through 5". The lightweight results from a new design based on sound and proved engineering principles.

Mission Rolling Dog teeth grip the hardest pipe available today with minimum stress concentration. New positive lock retains dogs in place. The standard rolling dogs and new solid inserts let these slips do the job of the heavyweights. You will find all the proved and popular Mission slip features: Segments are self-leveling as insurance against crimping the pipe. Top of slips is constructed to allow heavy elevator blows to be absorbed. Renewable hinge pins on these Lightweight Slips mean long life, less replacement. Flexible handles bend instead of break.

These new slips—built like a bridge—are one more proof Mission knows drilling problems and knows how to overcome them. Available at your supply store.

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What's New / IN THE INDUSTRY

Sinclair BP Join Alaskan Exploration

Sinclair Oil & Gas Co. and British Petroleum Exploration Co. (Alaska) have joined a multicompany project for continued exploration of 1-million acres in the Yakutat area of Alaska.

BP and Sinclair will each earn 12½% interest by assuming drilling and certain other costs projected for 1960 and 1961.

The rights were originally obtained from Interior Dept. by Colorado Oil & Gas Corp., which started preliminary exploration in 1956. Frankfort Oil Co., Dallas, joined the venture that year. In 1958, Continental Oil Co. joined the project, and agreed to participate in exploration costs into 1960.

The latter three companies will each retain a 25% interest in the project. They have drilled three exploratory tests, all with noncommercial oil and gas shows. A fourth test, 15 mi. southeast of Yakutat, in the Dangerous River area, is currently drilling below 2,000 ft.

•

B. H. Lord, Jr., takes over as director of the American Petroleum Institute's Division of Transportation on Aug. 1.

He succeeds James E. Moss, who is retiring. Moss, however, will be a special consultant on the staff of API's president, Frank M. Porter. Lord has been the Transportation Division's associate director during the past year.

•

Sid Richardson Carbon Co. will use United Carbon Co. processes in its planned 50-million-lb.-a-year carbon black plant at Big Spring, Tex.

The two companies completed licensing agreements this week. Construction of the plant is expected to start late this summer. It will be built adjacent to Cosden Petroleum Corp.'s refiner, with completion slated for mid-1961.

•

All natural gas produced by Gulf Oil Corp. in the "rapidly developing" Arkansas Valley area of western Arkansas will be sold to Arkansas Louisiana Gas Co. for intrastate use.

The two companies signed a 20-year agreement last week. Gulf will immediately start extensive drilling and development of its more than 300,000 acres of leases in the valley.

The contract covers presently developed gas reserves in the Knoxville field of Johnson and Pope Counties, the Spadra and Paris fields of Logan County, the Washburn field of Sebastian County, and a portion of Kibler field in Crawford County.

•

American Petrofina has bought natural gas producing properties in Texas that will boost its proven gas reserves 16% to an estimated 232-billion cu. ft.

The properties include 28 wells producing approximately 225-million cu. ft. of gas per month, and are located in Hidalgo and Willacy counties. They were purchased for cash from a group headed by John L. Loeb. The company also expects the purchase to boost its natural gas sales by approximately 16%.

•

Tennessee Gas Transmission Corp. wants to boost its rate of return from 6% to 7%. The company filed a brief with the Federal Power Commission as part of its proceedings in a natural gas sales rate increase application, submitted last November.

The commission has allowed the company a 6% rate of return since 1946.

TGT said the 1% increase is needed in view of the steady rise in cost of debt capital. The pipeline system has been expanded several-fold in the past few years to serve constantly increasing demands. Such expansion has made it necessary, the company said, to raise more than $200-million of additional debt capital during a period of high interest rates since 1956. TGT contends that the increase in interest cost should be offset by the increase in the over-all rate of return.

•

Kansas Corporation Commission set the August crude allowable at 293,000 b/d, same as for June and July. Figure had been recommended by state conservation director. Nominations totaled 301,093 b/d, increase of 14,020 b/d from July estimates.

THE RACE BELONGS TO THE SWIFT

Events can move like greased lightning in the oil and gas industry . . . and the bank giving maximum service is the bank with the experience, knowledge, manpower and resources to move with them. When an oil and gas man brings his financing requirements to Republic, time-and-money consuming delays are cut to the bone. Republic's petroleum engineers are in the field, making professional on-the-spot evaluations . . . therefore, action is swift!

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Next time, talk to Republic . . . a leader in the field of oil and gas financing. We're here to serve you!

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CAPITAL AND SURPLUS
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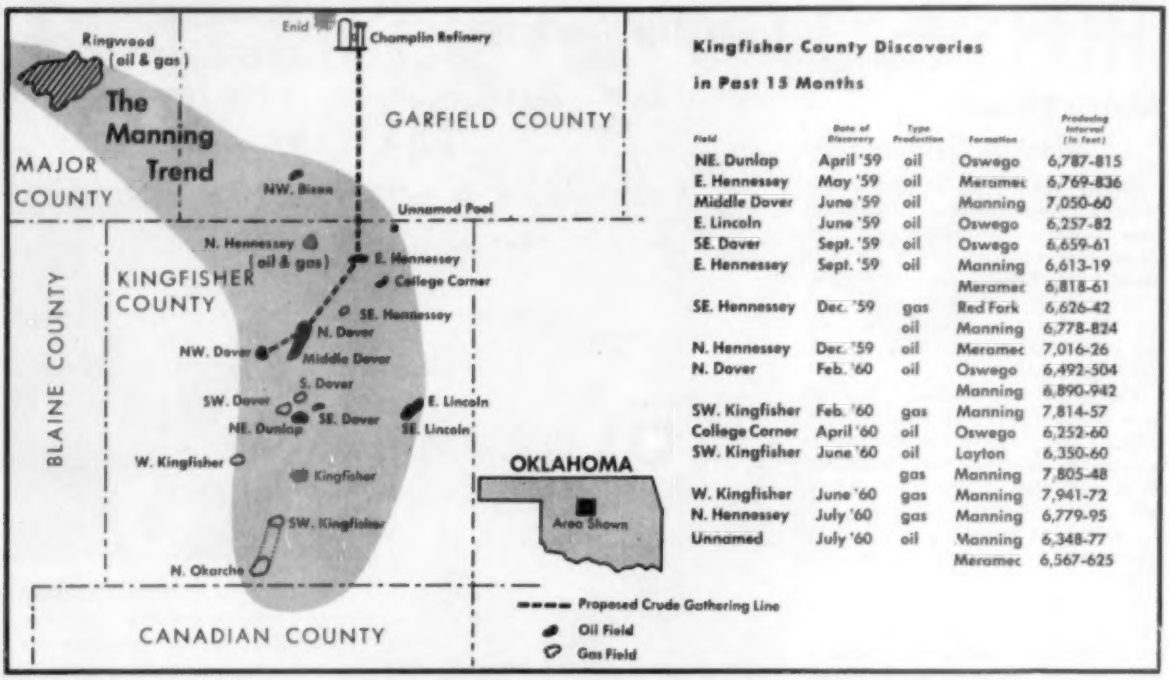
LARGEST IN THE SOUTH

MEMBER FEDERAL DEPOSIT INSURANCE CORPORATION



Kingfisher County Discoveries in Past 15 Months

Field	Date of Discovery	Type Production	Formation	Producing Interval (in feet)
NE. Dunlap	April '59	oil	Oswego	6,787-815
E. Hennessey	May '59	oil	Meramec	6,769-836
Middle Dover	June '59	oil	Manning	7,050-60
E. Lincoln	June '59	oil	Oswego	6,257-82
SE. Dover	Sept. '59	oil	Oswego	6,659-61
E. Hennessey	Sept. '59	oil	Manning	6,613-19
			Meramec	6,818-61
SE. Hennessey	Dec. '59	gas	Red Fork	6,626-42
		oil	Manning	6,778-824
N. Hennessey	Dec. '59	oil	Meramec	7,016-26
N. Dover	Feb. '60	oil	Oswego	6,492-504
			Manning	6,890-942
SW. Kingfisher	Feb. '60	gas	Manning	7,814-57
College Corner	April '60	oil	Oswego	6,252-60
SW. Kingfisher	June '60	oil	Layton	6,350-60
		gas	Manning	7,805-48
W. Kingfisher	June '60	gas	Manning	7,941-72
N. Hennessey	July '60	gas	Manning	6,779-95
Unnamed	July '60	oil	Manning	6,348-77
			Meramec	6,567-625

KINGFISHER COUNTY is the focus of a drilling activity over three counties and covering more than 400 sq. mi. as the . . .

Manning Trend Play Enlivens Oklahoma

A huge trend play covering more than 400 sq. mi. is sweeping parts of three west-central Oklahoma counties.

The trend, known as the Manning Trend, has its current focal point in a strip two townships wide in Kingfisher County(map).

From there, it stretches out dogleg fashion through southwestern Garfield County to a northern terminus in the big Ringwood field of southeastern Major County.

A wildcat currently being drilled may, if successful, extend the play southward into northern Canadian County.

At last report, 30 holes were in either the drilling, testing, or completion stage in the Kingfisher County portion of the trend; six tests were being made in Major; and one wildcat was located in Garfield.

Thirteen of the Kingfisher holes are classified as wildcats.

Three significant pool openers were completed in the trend in 1958, eight during 1959, and eight in the first six months of this year.

Current interest in the Kingfisher County part of the trend started in January, 1957, when Manning gas production was found in the Northwest Dover area.

This touched off a land play that resulted in nearly all of the possible productive acreage in the county being leased for $15 to $25 per acre.

Recent reports, however, have landmen offering as much as $100 per acre for choice acreage.

Drilling activity got heavy in mid-1958 when operators began following up their leasing programs with exploratory work.

Multipay possibilities, a sparkling success ratio, 80-acre spacing for oil wells, and a ready market for both oil and gas are the factors that have spurred activity.

Indicative of the industry's awareness of multiple completion opportunities was the July 6 Corporation Commission approval of a request by Carter division of Humble Oil & Refining Co. for administrative approval of multiple completions in townships 18n-7w and 19n-7w.

The order grants Carter blanket approval for multiple completions in wells producing from the Basal Pennsylvanian-Mississippian Unconformity (Cherokee-Chester), Manning, Oswego, Layton, and Meramec.

As for the drilling success ratio, six new fields and two zone discoveries have been opened up in Kingfisher County, against two dry holes, since the first of the year.

Not one development test has been plugged and abandoned this year.

Eighty-acre spacing in the trend, granted by the Oklahoma legislature, has had considerable influence on the willingness of major companies to invest heavily in the area.

Says one major: "Without sufficient experience to develop a sure knowledge of reserves, it's doubtful that my company would have gone so heavily into the play had two wells been required instead of one."

All development drilling since the first of the year has been on 80-acre spacing for oil and 640-acre for gas.

Kingfisher's two most promising oil pools—North Dover and East Hennessey—have been developed on 80-acre spacing exclusively.

An unsual agreement between Oklahoma Natural Gas Co. and producers in eight Kingfisher County townships has done much to encourage gas well drilling.

Under the agreement, Oklahoma Natural will pay 15¢ per Mcf. for gas

in this area—townships 15 through 18n, and ranges 7 and 8w—until reserves of 200-billion cu. ft. are proved. At that time, the price will escalate to 16.8¢ per Mcf.

Proved gas in the North Okarche field alone was placed at 30-billion cu. ft. at the time the agreement was signed, last April. And the reservoir—now believed to underlie the newly discovered Southwest Kingfisher field—currently is estimated to contain at least 50-billion cu. ft. of gas.

An outlet for the six shut-in gas wells in this area is seen as assured before the end of the year.

Oklahoma Natural says that bids for a gathering system are being negotiated, and that November has been set as the target date for moving the gas.

The right to strip liquids from the gas, some of which is quite wet, has been retained by the producers, and there are reports of a natural gas products plant to be built near Kingfisher townsite.

Most of the crude from the trend is being trucked at present, but construction of a gathering system has been proposed for certain areas.

The Enid refinery of Champlin Oil & Refining Co. is less than 15 mi. from the trend's northernmost production, and crude from most of the pools is being trucked there, at a cost to the producers of 18¢ a bbl.

Champlin recently proposed building a crude gathering system connecting the East Hennessey and Dover areas with the Enid refinery. The proposal is for 6-in. and 4-in. pipe, with total cost placed at about $500,000.

Subject to operator approval, Champlin wants to amortize the system with a 10¢-per-bbl. gathering charge for three years, at which time the charge would be discontinued.

The East Hennessey and Dover area pools now account for about 1,200 b/d of the total crude runs from Kingfisher of 1,800+.

The Manning zone of upper Mississippian (Chesterian) age is the common denominator throughout the trend, but 16 different formations have indicated oil and/or gas possibilities.

These formations, ranging stratigraphically from upper Pennsylvanian to lower Ordovician, include the Bartlesville, Cottage Grove, Cleveland, Layton, Oswego, Prue, Skinner, and Red Fork, of Pennsylvanian age; the Manning, Meramec (Mississippi Lime), and Mississippi Chat, of Mississippian age; the Hunton, of Devonian age; and the Simpson and Wilcox, of Ordovician age.

Virtually all development wells and a large percentage of the wildcats are being drilled on permits calling for depths of 7,500 to 8,000 ft.

Earlier drilling—in the late 40s and early 50s—was aimed at the Hunton and the Simpson.

And even though the deeper formations have proved productive in some wells in the trend, few operators consider them worthwhile objectives in comparison with the more prolific and widely distributed Pennsylvanian and Mississippian pays.

One major company says it is spending about $125,000 to drill and equip oil wells in the Manning, and slightly less for gas wells. Dry hole costs are about $90,000 each.

Geology of the Manning Trend, while apparently not complex, is not completely defined.

The area is known to be influenced regionally by a westerly dip off the north-south trending Nemaha Ridge, and by a southerly dip into the axis of the Anadarko Basin. (The entire trend is on the northern flank of that vast basin.)

Composite regional dip is in a southwesterly direction at the rate of about 75 to 100 ft. per mile.

Most of the Pennsylvanian and Mississippian pools in the trend are primarily stratigraphic in nature, with oil or gas accumulation dependent primarily on porosity and permeability.

Permeability pinchouts form lateral barriers in the Manning as the formation tightens in an unpredictable manner through the area.

Throughout the trend, the zone is a dirty limestone section interbedded with shale and siltstone stringers.

Where it reaches its maximum development, in the northwest portion of the trend, the Manning attains a depositional thickness of 170 ft. or more. But the pay section is usually considerably less.

One major company geologist says the probable average net pay section is around 15 to 30 ft. over the trend as a whole.

The Meramec generally shows a somewhat thicker productive section, with perforated intervals approximating 120 ft. in some wells.

The amount of recoverable oil from the Manning in the Dover area has been conservatively placed at around 100,000 bbl. per acre (assuming 80-acre spacing).

Though no reliable estimate of the ultimate extent of the Pennsylvanian or Mississippian reservoirs can be made until the pools are defined, observers feel that a reasonable guess is that the Manning may eventually prove productive under a quarter of the trend's areal extent.

In Mississippi . . .

McComb Allowable Kept Low

Mississippi's Oil & Gas Board has voted to maintain the emergency 50-b/d-per-well allowable in the McComb pool, Pike County.

Testimony at a hearing last week showed that reservoir pressure in the pool had dropped to 4,032 psi., based on test runs on 20 wells the previous week, after the pool was shut down for three days. Reservoir pressure was 4,904 psi. when the pool was opened in August, last year.

The 50-b/d allowable was put into effect June 24 and was to continue through July. The previous allowable was 150 b/d.

James M. Borthwick, chief engineer for the oil and gas board, reported that the drop in pressure recorded in the last test was less than in the tests for the previous two months. He added that the July drop was .92 lb. daily, compared with 1.65 lb. daily in the June test.

Declines in pressure have been noted since March.

Marketing of crude from the pool, meanwhile, appears to have been settled.

Sun Oil Co., major operator, and Esso division of Humble Oil & Refining Co. have made an agreement whereby Sun now purchases 5,000 b/d and moves it via the Interstate Oil Pipe Line Co. line to Esso's Baton Rouge (La.) refinery.

The arrangement was made a few days before the July 1 deadline Esso set to cut off purchases from the pool.

Drilling activity in the area has fallen off from the peak set earlier this year. A recent completion may spark new interest, however.

Six rigs are currently active, compared with more than 30 six months ago (PW—Mar.4'60,p33).

Sun's No. 1-C Lampton-Wallace, section 22-3n-7e, logged a surprising 61 ft. of oil sand. The thickest pay section previously encountered was 27 ft.

The new producer is the southernmost well in the Pike County pool, which now has more than 100 wells.

DOW

serves
PETROLEUM
across
the board

Dow chemicals and the Dow research staff serve the entire petroleum industry, up and down the line . . . from providing drilling chemicals to assisting in production and refining, to trouble-shooting gas conditioning operations. The daily work of Dow's petroleum and gas conditioning laboratories includes such widely ranging problems as drilling mud breakdown, contamination of gas processing chemicals, and new product development. This report highlights just a few of the many hard-working Dow chemicals and services which daily benefit the industry.

HIGH-DENSITY BRINES CUT COMPLETION COSTS FOR GULF COAST DRILLERS

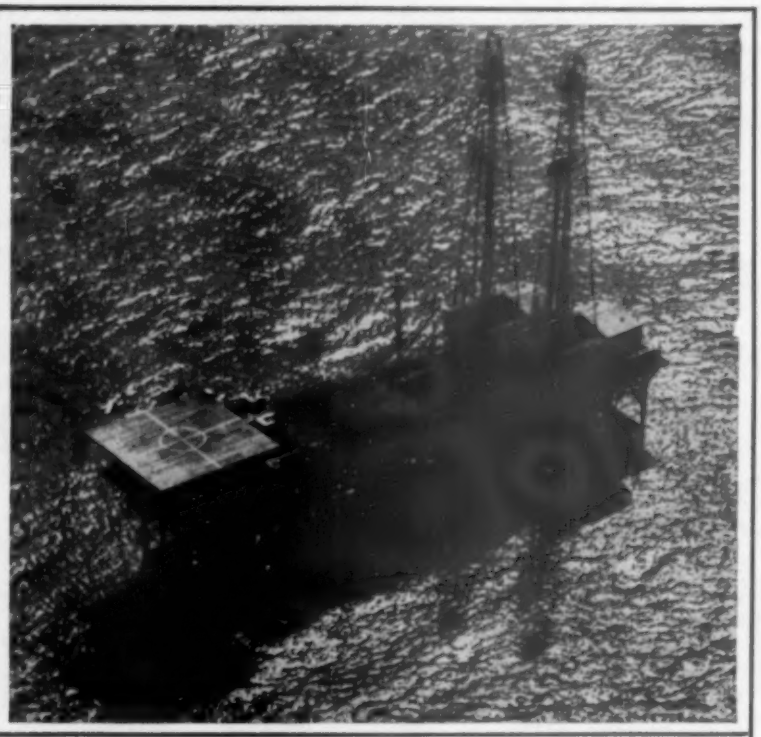
More and more Gulf Coast drillers are discovering that completion costs can be cut substantially by the use of new high-density brines made from Peladow® . . . the highly concentrated pellets of Dow calcium chloride.

Because Peladow pellets (94-97% calcium chloride) are the most concentrated form of active brine material available, drillers save at the outset on freight costs. But even more important are the savings on work-over costs when brines containing high-density Peladow replace weighted packer muds. With these heavy brines, there is no troublesome solids precipitation or solidification, so often encountered with packer muds in annular fillup.

The easy handling of Peladow further reduces high rig and handling costs in offshore and tideland operations. On the spot, the pellets dissolve quickly in one step in a mud pit or tank, and the resulting brine can be handled with standard mud pumps.

Concentrated Peladow will form stable brines of much higher densities than are possible with sea water or sodium chloride—thus suiting them for use in high pressure as well as low pressure wells. Such brines are regularly used at densities up to 11.6 pounds per gallon. Even higher densities are easily obtainable with combinations of Peladow and other inorganic salts.

There's an informative brochure available entitled "Peladow Calcium Chloride For Oil Well Completion Brines" that is full of detailed information on this cost-saving material. Write for your copy.



Economical Peladow® pellets produce completion brines of much higher densities than are possible with either sea water or sodium chloride.

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preventive medicine for mud

Bacteria and fungi haven't a chance when starch-containing muds are shielded by Dowicide preservatives. Preventing starch decomposition by microbe attack, particularly where mud pH falls below 11, is a simple, economical matter . . . add a bit of Dowicide G!

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Dowicide® preservatives control bacteria in high-starch muds and process water.

• DOW MURIATIC ACID
powerful performer

There's no more versatile aid to the industry than Dow muriatic acid. In inhibited form, this high-quality chemical is used in acidizing wells to increase the flow of petroleum many fold.

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DOWTHERM® A
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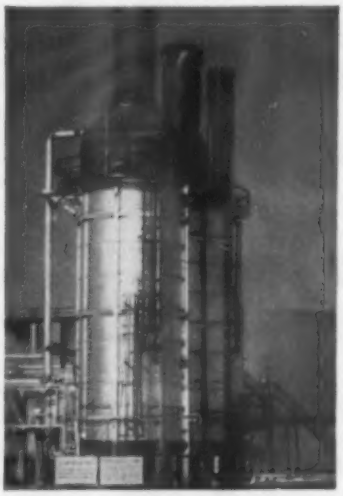
Compared to direct fire heating, Dowtherm A gives more uniform temperature control, reduces carbonization, and because of better efficiency, there are savings on fuel. When heating reboilers for regenerating glycol, Dowtherm A does not cause degradation of the glycol, as do high skin temperatures found in direct fire heating. Compared to steam, Dowtherm A eliminates the hazard of high pressure. At 700°F., steam is over 3000 psi; but Dowtherm A is at *only 95 psi.*



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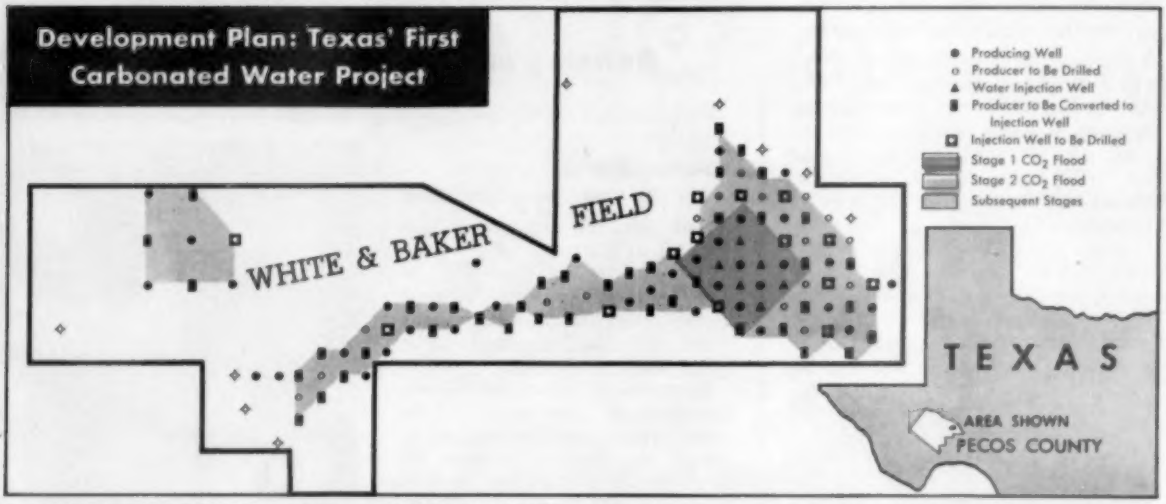


THREE-STAGE INJECTION is proposed for this field by a three-company team, with Helmerich & Payne as operator.

CO_2 Waterflood Will Get Texas Tryout

Texas' first secondary recovery project involving the injection of carbonated water is scheduled to get under way around Oct. 1, subject to Texas Railroad Commission approval.

Testimony concerning the proposed flood was given late this week at a special hearing of the commission in Austin.

The project is slated for the White & Baker field, Pecos County, West Texas. Helmerich & Payne, Inc., Tulsa, will be operator for itself and American Petrofina Co. of Texas, Dallas, and Oil Recovery Corp., Tulsa (PW—Jul.15'60,p25).

The Queen Sand reservoir (upper Permian) underlying the White & Baker field is expected to yield nearly 6-million additional barrels of oil as a result of the carbonated waterflood.

Evidence presented at the hearing showed that an estimated 367,000 bbl. of primary reserves remain in the pool. Conventional waterflooding could be expected to recover an additional 3,732,000 bbl. of oil, while the Orco Process is expected to yield still another 1,946,000 bbl.

J. W. Whitney, Jr., H&P production superintendent, says, "Tests have convinced us that carbonated water injection, with its increased injectivity and resultant faster payout, will make the operation an economic success.

"Water injectivity into six wells on the pilot [waterflood] plot was too low to warrant expansion of the flood, although two inside production wells did respond with slight production kicks.

"A series of tests conducted in the wells this spring showed injectivity increases ranging from 130% to 890% when carbon dioxide was injected simultaneously down the wellbore."

The flood, planned as a three-stage project, has a total life expectancy of approximately nine years.

The entire reservoir, with an areal extent of some 1,200 acres, will be flooded in consecutive stages (map). The first stage contains 16 injection wells arranged in 20-acre, five-spot patterns. Second-stage injection will involve 18 injection wells, and third-stage injection will involve 27 injection wells.

CO_2 injection will be completed within three years, with each stage requiring a period of approximately seven to nine months. Plain water will be used during the remaining life of the flood. Whitney says first-stage injection will require about 60 tons of liquid CO_2 per day.

Liquid CO_2 to serve the Pecos County project will be trucked from the nearby liquefaction plant now being built by West Texas CO_2 Co.

The plant, jointly owned by H&P and Oil Recovery Corp., will take CO_2 gas now being vented by Phillips Petroleum Co.'s natural gas treating plant in Puckett field (PW—Jul.15'60,p36).

Water to supply the flood will come from one existing and two proposed wells drilled to the fresh water Trinity Sand, encountered at approximately 400 ft. Some 6,000 b/d of water will be needed for first-stage injection.

The producing structure in the White & Baker field is an east-west trending anticline with its axis underlying sections 44 and 53, block Z.

A non-expanding gas cap occupies the crestal position of the structure. Original gas-oil contact was at approximately 1,070 ft., and present gas-oil contact is at 1,050 ft.

There is no evidence suggesting the existence of bottom water; drive mechanism is of the dissolved-gas type.

The Queen Sand is encountered throughout the pool at an approximate depth of 1,750 ft.

Average pay thickness ranges from 20 to 25 ft.

Porosity averages 21%, and permeability is 24 millidarcies. Residual oil saturation is placed at 27% of the pore space, and oil is 31-gravity.

Present production from the field's 73 oil wells ranges from 2 b/d to 20 b/d per well, with all wells now on pump.

The entire field currently produces approximately 6,750 bbl. of oil per month under exempt allowable.

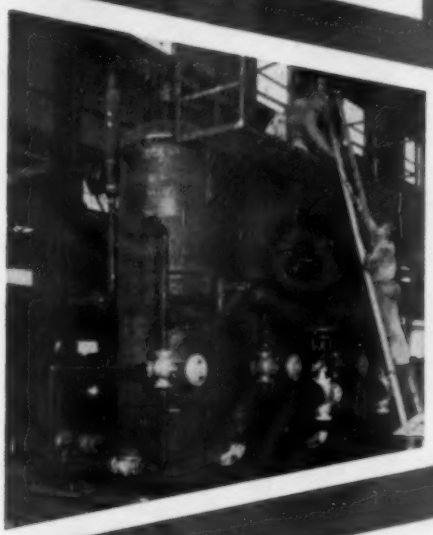
The field discovery was completed in the reservoir's gas cap in May, 1935, for 14,460,000 cf/d of gas.

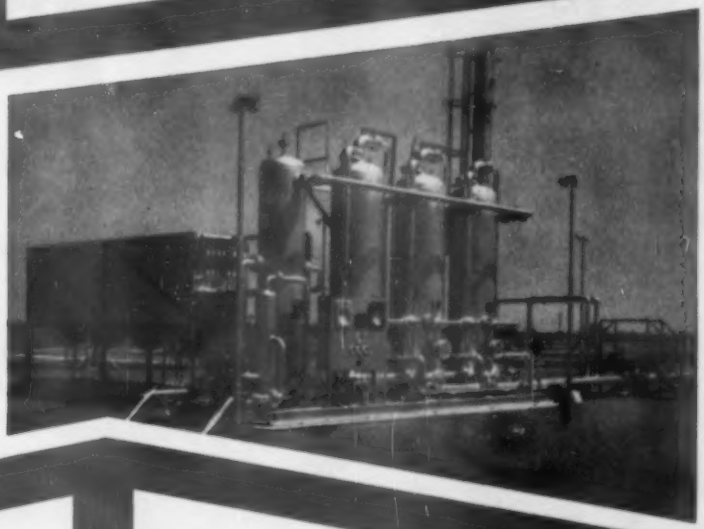
The pool's first oil well was completed in June, 1938. More than 90 oil wells, with potentials ranging from 25 b/d to 250 b/d have been drilled since then on 20-acre spacing.

A total of some 15 gas wells have been completed from the Queen Sand. H&P acquired the producing properties in 1945, and instituted a gas-cycling program in 1947. This, however, was shut down in 1954 because of excessive gas breakthrough. Cumulative gas injection amounted to more than 1-billion cu. ft.

SUPERIORITY

FROM START TO FINISH...





150 DAU'S ARE NOW ON STREAM

AND THE DEMAND IS GROWING!

For superior performance and maximum profits, specify Parkersburg equipment. Parkersburg quality products are backed by the know-how of men trained to think in terms of customer satisfaction and the job to be done. For example, you profit by Parkersburg's precision pre-engineering . . . every DAU is completely test-assembled in the plant to assure fast field assembly and efficient operation. After start-up, the Parkersburg DAU chalks up additional profits in **maximum hydrocarbon recovery** from your gas stream, with **complete dehydration** as an extra bonus at no extra cost. This is why old customers reorder and new customers are buying **Parkersburg** DAU's — the outstanding name in the oilfield.

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PARKERSBURG—The FULL LINE in Pressure Vessels . . . Separators, Metering Equipment, Treaters, Heaters, Knockouts and Oil Skimmers, Scrubbers, Hyrecos, Hydrocarbon Recovery Units, Glycol Dehydrators, Stabilizers.

A TALE OF TWO FLOODS

HOW TWO WATERFLOOD OPERATORS INCREASED

CASE NUMBER ONE

This major oil company, operating a shallow waterflood unit, was experiencing severe declines in some producing wells.

In 1956, five wells were fractured. Production increases were so encouraging that the fracturing program was continued. Results have been analyzed only through 1958, but recent experiences have been at least as good or better than earlier results.

During the three years under study, 52 producing wells were fractured by Dowell and 6-month tests were obtained.

Production before fracturing averaged 2.1 bopd for all 52 wells. Six months after fracturing, production averaged 19.5 bopd—an average increase of 17.4 bopd or a percentage increase of about 930 per cent.

In addition to the producing wells, many injection wells were also fractured so that increasing volumes of water could be handled with a minimum addition of wells and pumping equipment.

Three-month reports are available on 20 such injection wells. Before fracturing, the wells would take an average of 44 bwpd at line pressure. Three months after fracturing, they would take an average of 202 bwpd—a 4.6-fold increase.

No exact monetary value can be placed on this increase, but it is obvious that the system could handle more water without increases in equipment and power requirements.

CASE NUMBER TWO

This independent operator started flooding a Bartlesville sand pool that had been abandoned. The field was originally opened up in 1917 and had been depleted by primary methods.

Early in the flood, the operator found that conventional five-spot flooding of the central part of the pool did not yield economical production. A general policy was developed to inject water in the central part and drill producing wells around the periphery.

Apparently there was still considerable oil in place along the edges, but the relatively tight formation prevented profitable producing rates without fracturing.

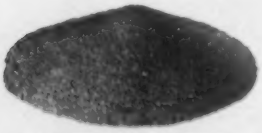
In 1952, the first two fracturing treatments were performed. Results were so encouraging that a systematic program of drilling and fracturing was started. By

THE STORY AT A GLANCE

- Location — **Eastern Kansas**
- Operated by — **a major oil company**
- Number of fracture treatments — **52**
- Average production per well before fracturing — **2.1 bopd**
- Average production per well, **six months** after fracturing — **19.5 bopd**
- Average per cent increase in production — **930 per cent**
- Approximate cost of all treatments — **$27,000**

MORE IDEAS FROM DOWELL

TO HELP INCREASE PROFITS FROM SECONDARY RECOVERY



MAGNESIUM PELLETS

are often pumped into the formation before acidizing to heat the acid and melt away heavy hydrocarbons that might be blocking either injection or production. These treatments have proved remarkably successful.

ROCKSHOCK*

(Implosive formation treating service) is proving valuable both for formation cleaning and fracture initiation. It often makes possible the fracturing of formations that could not otherwise be fractured.

EZEFLO*

is a new Dowell surfactant. Available in bulk, it is especially useful for lowering water injection pressure. It is suitable for any use where an efficient, concentrated nonionic surfactant is indicated.

PROFITS WITH DOWELL STIMULATION SERVICES

THE STORY AT A GLANCE

- Location — **Eastern Kansas**
- Operated by — **an independent producer**
- Field had been abandoned before waterflood started
- Number of fracture treatments — **34**
- Cumulative production from fractured wells* — **866,512 barrels**
- Cost of fracturing* — **$25,828**
- Fracturing cost per barrel of oil — **3 cents**
- Fracturing cost as a percentage of total production cost — **less than two per cent**

*to December 31, 1959.

the end of 1959, 34 frac jobs had been performed at a total cost of approximately $25,828. All but a few of the earlier jobs were performed by Dowell.

Fracturing fluids, sizes of jobs and techniques were modernized and improved, as the program continued, to assure the operator of the greatest possible return on his investment.

Cumulative production from these wells totaled 866,512 barrels by the end of 1959. The net sales price of the oil was in excess of two million dollars. Cost of the fracturing treatments amounted to 3 cents per barrel of oil produced or less than two per cent of the total cost of producing the oil.

For this two per cent, the operator changed a flood that was headed for economic failure into an excellent financial success.

These field studies are just two more examples of how Dowell services can help operators improve production, keep down costs, improve profits and speed payout on investment.

You may run into a wide variety of problems in addition to oil production when you operate water disposal, gas injection or waterflood facilities. Your Dowell representative has a wide variety of services and products—both new and old—to help you solve your problems. A few examples are noted in the box below.

In addition to those services mentioned here, Dowell offers the Frac Guide*, the Acid Guide*, Cealment*, Corban* and Freflo* to help solve problems of secondary recovery. For more information on how Dowell can help you increase profits from your secondary recovery, pressure maintenance, water disposal or gas injection projects, **dial Dowell.** Dowell services and products are available from more than 150 offices and stations in the United States, Canada, Venezuela, Argentina and Germany. Dowell, Tulsa 1, Oklahoma. *Dowell Trademark

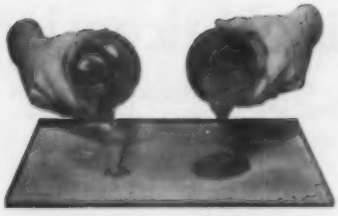
Services for the oil industry

DOWELL

DIVISION OF THE DOW CHEMICAL COMPANY

ABRASIJET*

(Dowell-developed abrasive jetting service) can be used to initiate fractures, perforate or clean the formation face. On injection or disposal wells the result is often a good increase in receptibility and/or a lower injection pressure. On producing wells, the results have been higher production, better gas/oil or oil/water ratios or improved results from fracturing or acidizing.

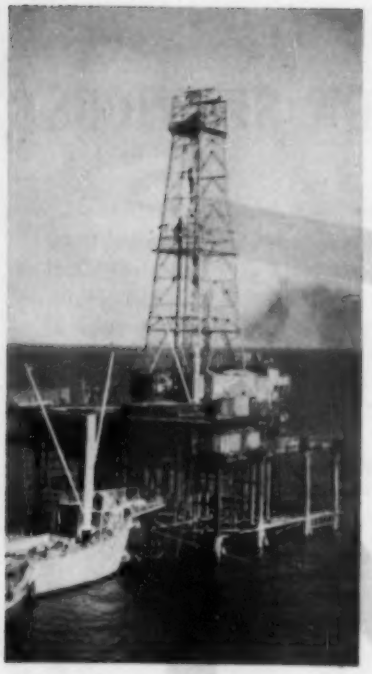


STABILIZED ACID

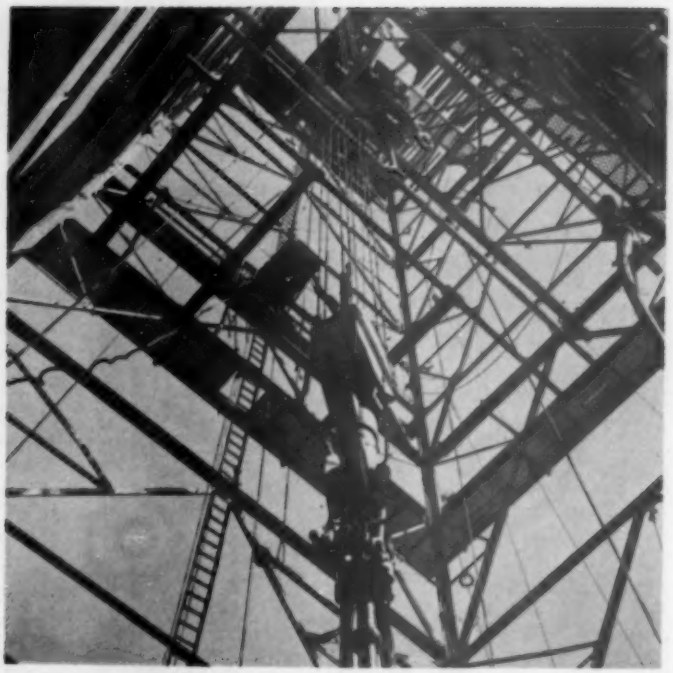
is regular acid with a special addition agent to prevent the deposition of gummy iron or aluminum hydroxides which might otherwise plug formation pores.

GYPBAN*

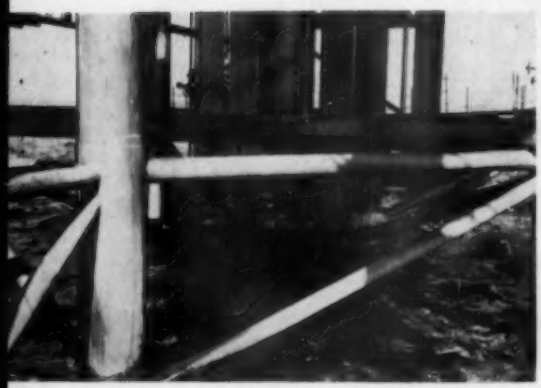
is a Dowell agent that is used to prevent formation plugging by water-formed gyp deposits. It is oil-insoluble and dissolves only gradually in water, thus providing months-long protection.



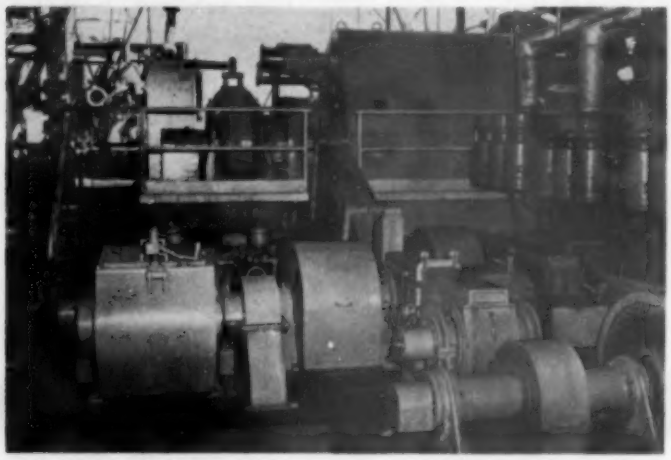
TWO-IN-ONE rig is operated by Loffland Brothers in Bay Marchand field.



SIX-POSITION DERRICK has two sets of traveling blocks and two complete rigs—one for drilling, the other for completions or workovers.



MASSIVE PILINGS, 30 in. in diameter and 300 ft. long, are driven 200 ft. below the Gulf floor.



SPACE is a critical item on the platform. Note cathead for the workover rig (left background) beyond drilling rig drawworks and engine compounds.

Double-Duty Rig Makes Bow Offshore

The cost of offshore drilling is being cut significantly by a "double-duty" rig which permits a crew to complete or work over one hole while drilling another.

The unique addition to offshore operations has made its bow on The California Co.'s "R" structure, 30 mi. south of Leeville, La., in the Bay Marchand field.

Two rigs have been used on a single offshore derrick before (PW—Jun.24 '60,p40). And the Russians have long used such units.

The new unit differs in that it has one lightweight completion or workover rig and one heavy-duty drilling rig.

Usually, conventional rigs are used both for completion and remedial work for offshore wells drilled from a single large platform. But this ties up the rig for days, or even months—a costly proposition.

The new arrangement permits the heavy-duty rig to be switched quickly from a completed drilling job to a new location.

The smaller rig can then be put into service to complete the hole just drilled, or to perform workover jobs on other wells on the platform.

Other advantages of the new unit: By having one contractor perform both drilling and completion work, the personnel have first-hand knowledge of

the holes; supervisory personnel of one contractor can contribute maximum assistance to completion; and various problems of supply, transportation, and communications receive optimum coordination.

Loffland Brothers Co. will use the dual arragement to drill and complete 18 directional wells for The California Co. in Bay Marchand field.

Six directional holes will be drilled from each of the three derrick positions on the structure. Completion depths in the field average about 11,000 ft.

The rig is skidded on specially notched skidding beams by means of three powerful hydraulic jacks. Stratoflex hose and fittings are used in conjunction with hydraulic pressure from the rig to actuate the jacks.

The drilling rig can be skidded from location to location in a matter of hours.

Each rig is a complete unit in itself, with separate drawworks, engines, mud tanks, and the like.

The drilling rig—Rig 130—is equipped with a Mid-Continent U-914 drawworks powered by four Waukesha six-cylinder diesel engines of 460 hp. each at 1,200 rpm. There are two 700-hp. slush pumps and a 500-hp. auxiliary pump powered by a Cummins diesel engine.

The rig has a 500-ton Regan traveling block, a Gray swivel, and a 27½-in. rotary table.

The Lee C. Moore six-well derrick is 156-ft. high from the floor to the gin pole, and 142 ft. from the floor to the top of the crown. It stands on a 24-ft.-high substructure, which is supported on steel pilings that rise some 56 ft. out of the water, depending on the tides.

Water depth in the Gulf at this point is roughly 48 ft.

The completion and workover rig—Rig 155—has a Mid-Continent U-15 drawworks powered by a Cummins VT-12 Turbodiesel 600-hp. engine.

A converted LST is anchored adjacent to the platform for pipe and cement storage, crew quarters, emergency evacuation, and other uses. Mud tanks for the completion rig are located on the LST, along with most supplies for the drilling operation.

Personnel and some supplies are carried to the rig by helicopters, which land on a heliport 80 ft. across, located on the stern of the LST. Bulk of the equipment and operating personnel are brought to the structure by a variety of boats.

Mud tanks for the drilling rig are located adjacent to the substructure on the lower level of the platform, along with production equipment. This includes surface-control equipment, oil and gas separation vessels, metering equipment, and other items used to handle production from the wells already completed from the platform.

The structure itself and the heavy-duty derrick on it are designed to withstand the high winds and waves that can develop in the Gulf.

Although the top of the derrick is some 236 ft. above the water, stability is achieved by using 300-ft.-long, 30-in.-diameter steel pipes driven almost 200 ft. below the ocean floor.

Strength is increased by using 24-in. steel liners inside the caissons, with cement run in between.

Brine-Disposal Projects Increase

Growth and complexity of brine-disposal operations in the U.S. and Canada are highlighted in a study by the Interstate Oil Compact Commission.

The study, conducted by the research committee of IOCC and reported at the recent meeting of the commission in Detroit, had these objectives: to survey brine production and disposal operations, problems, and practices; and to review the laws, rules, regulations, and enforcement procedures in various producing states or provinces.

Figures compiled by IOCC in several producing states show that the number of disposal projects is steadily climbing.

In Arkansas, for example, the number of disposal projects in 1955 was 26. One year later the total had climbed to 33.

Previously, the biggest yearly jump had been from 1953 to 1954 when the total climbed from 19 to 23.

In Texas, salt water disposal applications increased from 233 in 1952 to 347 in 1956.

And in Oklahoma, the Corporation Commission in 1956 issued an average of 51 disposal orders a month—ten times as many as in previous years.

Although the IOCC study was carried through 1956 and 1957, a Petroleum Week spot check shows the trend continuing through 1959.

In Texas, 184 salt-water disposal projects were approved in 1955 without a hearing, and 144 were approved after a hearing. In 1959, 245 were approved without a hearing, and 194 after a hearing.

In Kansas, 179 units were used for salt-water injection in 1950. This climbed to 260 units in 1955, and 351 units in 1959.

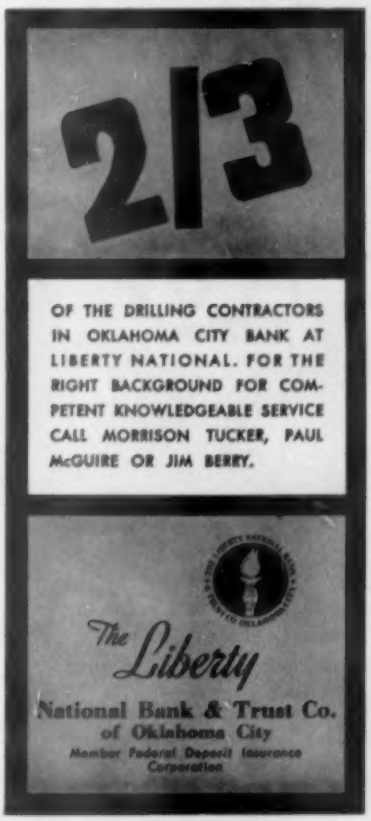
Subsurface disposal—injection wells—is on the upswing because the brine liability can frequently be turned into a pressure-maintenance asset.

"The return of produced brines [to the parent formation] is a very important and valuable adjunct to any reservoir pressure maintenance program," the study notes.

In addition, IOCC cites these other advantages: reduction of the pollution hazard of contaminating aquifers carrying fresh water or chemically valuable brines; convertability of dry holes and marginal wells in structurally low or edge locations to meet any need for additional disposal facilities at low cost; lower injection pressures; and operating economics.

At the same time, IOCC notes a decline in surface disposal via pits and streams.

Prime factor behind this is the danger of contamination of fresh-water sources, which has become a very important public relations point.


213
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What's New / IN EXPLORATION, DRILLING, PRODUCTION

Second Alaska Lease Sale Brings $407,654

Alaska's second oil and gas lease sale has netted $407,654, with the Union Oil Co. of California-Ohio Oil Co. team taking 20 of the 27 tracts offered.

Union-Ohio made the highest bids, two of $71,110 each, for a pair of University of Alaska tracts north of Ninilchik on Cook Inlet.

The state and the university offered 17,576 acres, with the university receiving $326,928 for 3,732 acres. In the first lease sale, held by the state last December, a total of $4,021,031 was paid for 77,716 acres.

•

Plan Virginia Wildcat

A group of nonoil businessmen in Virginia is backing a wildcat venture in King William County, in the nonproducing east section of the state.

So far, the only oil or gas found in Virginia has been in the extreme southwest corner, some 350 mi. from the wildcat site.

The business group has leased 14,000 acres in the name of Irvin Owings, Richmond, who says he is not one of the principals.

•

A 1.2-million-acre bombing range in Alaska may be opened for oil and gas leasing.

The area, across Cook Inlet from Anchorage, is being abandoned by the Air Force, which no longer needs the area as a bombing and gunnery range.

The state still has 82 days to select all or part of the area under one of its land grants. Any part of the range not taken will be offered for lease by the federal government.

•

Alabama's forced pooling of a unit in the center of Citronelle oil pool paves the way for what is slated to be the state's deepest test.

G. H. Jett, Shreveport, and Bart B. Chamberlain, Jr., Mobile, are expected to spud a planned 20,000-ft. Smackover test by early fall. The site is section 36-2n-3w.

The Alabama State Oil & Gas Board has approved 160-acre spacing for oil and 640-acre for gas, if the test finds production.

Gulf Oil Corp. had a permit to drill the location in 1947, but discontinued its development in the pool before the test was drilled.

Deepest test so far in the state is the Humble division of Humble Oil & Refining Co. No. 1 Jesse R. Williams, drilled to 15,659 ft. in 1958, 26 mi. northwest in Washington County.

Jett Drilling Co. will drill the deep test.

•

Alberta oilmen have joined in a common effort to fight oilfield fires.

The operators have forsaken their usual keen rivalry to set up a mutual bank of fire-fighting personnel and equipment.

The new approach is made possible by a newly compiled document, which provides quick reference to location, amount, and type of equipment that may be called upon for emergency service. The document, "Alberta Oil Field Fire Equipment Mutual Aid Lift," was compiled by a committee of the Canadian Petroleum Assn. and printed by the Canadian Assn. of Oil Well Drilling Contractors.

CPA says that close cooperation in sharing equipment will eliminate the necessity for each company to maintain large supplies for fire-fighting. Help can be summoned by short wave radio or telephone within minutes, says CPA, bringing manpower from drilling crews, water carts from seismic crews, bulldozers, cranes, trucks, fog nozzles, and explosives to bear on the emergency.

•

Montana will offer more than 18,200 acres of state land for lease at competitive oral bidding on Aug. 9, at Helena.

The listing includes 43 tracts of land throughout the state, but emphasis is on Musselshell, Wilbaux, Power River, and Pondera counties.

•

One of the larger federal units approved in the Rockies this year—the Battle Creek unit, Carbon County, Wyo.—has been approved by the U.S. Geological Survey.

The agreement covers 55,851 acres,

Shell Goes 'Spearfishing' for Oil off Texas

This seismic crew is exploring for oil in the Laguna Madre, along the Texas Gulf Coast. The man at the left, with the "spear," is actually thrusting seismic instruments into the soft mud bottom of the lagoon. The weird Cheramie Buggy at the right is typical of the specialized equipment needed for seismic work in the mud flats. The buggy's wide metal wheels keep it from sinking. And it tows the trailer-like vehicle in the center, which has oversize tires to keep it afloat. The crew, employed by Geophysical Service Inc., is on assignment for Shell Oil Co.

which is divided into two blocks, with the Humble division of Humble Oil & Refining Co. as operator.

The unit is just north of the Colorado line, and immediately east of Savery pool.

•

A multimillion-dollar project proposed by a three-company team for Alberta's West Whitecourt block gas wells has received the Conservation Board's conditional approval.

The project calls for pressure maintenance of the Leduc formation of the Windfall field, and the processing and disposal of gas produced in the Beaver Creek, Pine Creek, and Windfall fields.

•

A new oil and gas well service company—Go Electronic Surveys, Inc.—has been organized in Parkersburg, W. Va., by Edward E. Smyth.

The company, which will serve operators in West Virginia, Kentucky, and Ohio, will specialize in jet perforating and radioactivity logging. It also is associated with Go Oil Well Services, Inc., Ft. Worth.

•

A development well in Alberta's Westerose South (Dick Lake) field has broken Western Canada's record for thickness of effective gas pay.

The well has recorded 676 ft. of effective pay section in the D-3 reef formation. The previous record was 551 ft. in the No. 8-A Berland River, section 4-59-25w5.

The new record-setter is California Standard Co. No. 12-2 Westerose, lsd 12-2-45-1w5, in the north sector of the field, 50 mi. southwest of Edmonton. The D-3 was topped at 7,018 ft.

•

Drilling Highlights

West Texas—Mobil Oil Co. No. 1 State-Barett, section 18, block 63, T2, T&P survey, Culberson County, flowed 13.5-million cf/d of gas on open flow through perforations at 5,814-29 ft. and 5,842-57 ft. in the Strawn (Pennsylvanian). The discovery is 20 mi. west of some shallow Delaware sand production and 50 mi. southwest of Pennsylvanian production in Eddy County, N. M.

In Nolan County, Thomas D. Humphrey Oil Properties Inc. No. 1 Ruth Boyd, section 65, block 21, T&P survey, was dually completed for 726 b/d of 38.8-gravity oil through 16/64-in. choke and perforations at 6,223-39 ft. in the Caddo (Pennsylvanian); and for 198 b/d of 44.2-gravity oil through 16/64-in. choke and perforations at 6,353-57 ft. in the Ellenburger. The well, drilled to 4,504 ft. in 1949 and abandoned, is 4 mi. southwest of Ellenburger production in Favor pool and 7 mi. southwest of Caddo production in Sears pool.

New Mexico—Union Oil Co. of California No. 1-33 Union-State, section 33-15s-32e, Lea County, was completed for 1,224 b/d of 40-gravity oil through 30/64-in. choke and perforations at 9,952-80 ft. in the Wolfcamp. The discovery is 1½ mi. northeast of Anderson Ranch pool.

Nebraska—Murfin Drilling Co. No. 1 Barth, section 25-3n-27w, Redwillow County, was completed for 144 b/d on the pump through perforations at 3,418-25 ft. in the Reagan. Identification of the pay zone as Cambrian has created some controversy among geologists. There is no other Cambrian production from this age in Nebraska.

Kansas—United Producing Co. No. 1 Walton, section 4-30s-34w, Haskell County, was dually completed for 342 b/d of oil through perforations at 5,252-68 ft. in the Morrow, and for 175 b/d of oil through perforations at 5,408-18 ft. in the Chester. The discovery is 2½ mi. north of the Santanta Chester pool and 5 mi. south of Eubanks (Morrow and Chester) pool.

Alberta—Northern Natural Gas Producing Co. No. 1-A Donalda, lsd 11-22-41-18w4, 60 mi. northeast of Red Deer, flowed at the rate of 2-million cf/d of gas on test from both the Viking and Basal Quartz zones. The Viking was topped at 3,229 ft. and the Basal Quartz at 3,700 ft. The prospect is 5 mi. southeast of a venture unofficially reported to have found natural gas in the Detrital.

Montana—Sumatra Oil Co. No. 2 Stensvad, section 35-11n-30e, Musselshell County, flowed 227 b/d of oil through ¼-in. choke and perforations at 4,594-604 ft. in the Tyler. The opener is 3 mi. southwest of Ivanhoe pool.

Mississippi—Justiss-Mears Oil Co., Inc. and D. C. Latimer No. 1-A Nunnery et al, section 23-3n-6e, Amite County, flowed at the rate of 240 b/d through 6/64-in. choke and perforations at 11,116-19 ft. in the Lower Tuscaloosa. The discovery is 3½ mi. southwest of McComb pool.

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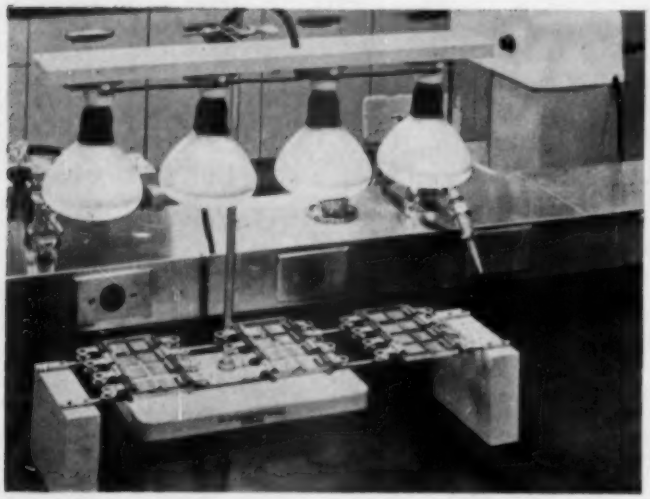

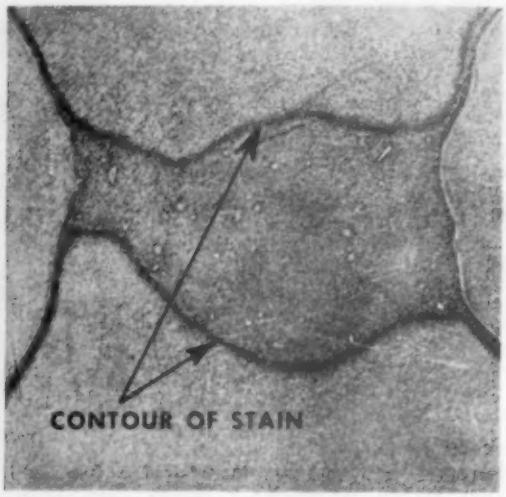

STAINING OF STEEL by rust-preventive oils is studied by Republic Steel Corp. in an accelerated test device (left) in an effort to eliminate the objectionable staining of cold rolled steel held in storage (right) as refiners . . .

Seek Stain-Free Rust-Preventive Oil

There appears to be a dilemma in the making for processors of industrial lubricants: The oil now used to prevent cold-rolled steel from rusting is not fully satisfactory, but curing the trouble might price it out of its market.

Lubricants used for rust-preventive purposes—ranging in viscosity from 45 to 100 SU @ 100F—may not represent a high gallonage (probably less than 100,000 bbl. per year) but they are very important. They are used for slushing cold-rolled steel sheets and strips that will be held in storage, and they constitute the base of more complex rust-preventive compounds, many of them applied to military equipment.

The adequacy of this oil is currently being challenged by the metal industry, especially in its application to cold-rolled steel.

Although the oil does prevent rust, it often stains the steel to the point where it is unsalable.

Staining appears when sheets of steel are stacked in storage. Because of their weight and their flexibility, there is uneven contact between the sheets. This causes uneven distribution of the rust-preventive oil, which tends to collect in "pool areas."

The stains are difficult to remove or to paint over, and a new pickling operation is frequently needed to make the steel usable.

Republic Steel Corp. believes that it's the unsaturates in the oil that cause the staining.

Republic is in the process of making an extensive study of the mechanism of staining, with a view to helping the oil companies develop a "truly stain-free rust-preventive oil."

The tests have established that stains are produced when three elements are in contact: steel, oil, and air.

And in tests of oils with bromide numbers ranging from 0 to 10 (the bromine number is an index of the unsaturate content in the oil), Republic found that the lower the unsaturates, the lower the tendency of the oil to stain steel.

Most refiners agree that a more thoroughly treated oil might prevent the formation of a stain. But its price would be prohibitive.

A white mineral oil, such as used for pharmaceutical purposes, is thoroughly acid-treated, and contains no unsaturates. But its cost would be well above what steel people can reasonably be expected to pay for a rust-preventive oil.

Therefore the best that can be offered at present is a compromise between price and quality.

Furthermore, many refiners do not agree that the unsaturates are at fault.

At the recent annual meeting of the American Society for Testing Materials, in Atlantic City, oil men and steel representatives discussed the matter at length. The refiners pointed out that polar materials, such as lard or other animal fats, are frequently added to the mineral oil to give it better adhesion to the steel. Such an additive may well be responsible for the staining if it is not carefully selected, oil men say.

To speed up its tests, Republic used a laboratory technique that could have wide applications in the oil industry.

That technique was devised to produce in the lab in one week, oil stains that would normally take from two months to a year to develop in actual practice.

Such a method, it is felt, could advantageously be used in refineries' laboratories for any tests involving oxidation.

The method consists in exposing to intense utra-violet light small steel panels on which has been deposited a drop of the oil to be evaluated (picture, above).

A quartz plate is held in place over the panel in such a way that a line of contact exists between steel, oil, and air. The stain is found to follow that line of contact.

The length of time it takes for the stain to appear with a particular oil sample, and the magnitude of the stain, can be correlated with the severity of the stain which that oil would make on steel which is kept in storage.

CB&I specializes in building refinery structures

Fourteen miles north of Sao Paulo, Brazil, at Capuava refinery, stands one of the largest Thermofor Catalytic Cracking Units ever built. The reactor, kiln, surge tank, catalyst storage tanks and main fractionator tower were fabricated by CB&I and erected by Chicago Bridge Construcoes Ltda. Six 150,000-barrel tanks for the storage of crude oil and a 10,000-barrel Hortonsphere were also built by CB&I.

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OFFICES AND SUBSIDIARIES IN PRINCIPAL CITIES THROUGHOUT THE WORLD

Jet Planes Found Not Guilty of Smog

Jet aircraft operating in the Los Angeles area do not contribute to the formation of smog, according to the Air Pollution Control District.

The Los Angeles APCD has just issued a report exonerating jet aircraft from "any generalized deterioration of air quality in the vicinity of the International Airport."

The report was prepared by Ralph E. George and Ralph M. Burlin, senior air pollution engineers, on the basis of extensive tests carried out under the supervision of Robert L. Ramlo and William Oaks.

The frequent complaints on the part of residents of the airport area were proved to be unfounded.

The tests showed that the total pollution from all commercial jets operating in Los Angeles County, including ground operations, was only 3.5 tons per day. "This amount," the reports concludes, "is not responsible for eye irritation, plant damage, or visibility reduction in this section of the county."

The complaints were based on the visible emission of smoke trailing the jets, particularly on take-off.

On take-off, some water injection is generally used, and that practice results in a discharge of relatively dense smoke. But it is of short duration: the study found that it never exceeded the three minutes permitted under the State Health & Safety Code.

During landing, and while in flight, the smoke emitted by jets was found to remain within the limits of "lawful opacity."

Complaints of property allegedly damaged by droplets falling from jets were also proven to be without foundation.

Chemical analyses disclosed that none of the cases investigated were in any way related to emissions from jet engines.

Further complaints on the part of residents were objections to noise and vibration, which are outside the scope of the air pollution unit.

The report recommended that the airlines attempt to reduce the visible smoke plume on take-off.

This could be accomplished, the APCD report indicated, either by some change in the fuel, or by a modification of the water-injection practice at take-off.

Special precautions had to be taken to collect samples from jet exhausts.

Difficulties and hazards were involved in securing the information required for the study, the report points out. The jet blast emerges from the aircraft at a speed of 700 mph. and a temperature of 700F; the noise level close to the engines is tremendous—although unnoticed by passengers within the aircraft—and there is danger of being "drawn into" the air intake of an engine in operation.

'Anti-Ozonants' Protect Aircraft

Protection of aircraft rubber accessories against attack by atmospheric ozone at high altitudes can now be obtained with appropriate "anti-ozonants" of petrochemical origin, developed by Universal Oil Products Co.

At high altitudes, ozone concentration in the atmosphere is considerably greater than at low levels. For this reason the well-known deterioration of the surface of rubber exposed to air is substantially increased at high altitude.

Little cracks—such as develop on the surface of automobile tires, giving them a "worn appearance" and shortening their life—become definitely objectionable when they develop in rubber door and window seals of aircraft. A pressurized cabin is vital to passenger comfort and to operational reliability. In one case, the rubber seals necessary to maintain that pressurized condition had to be replaced after every few hundred hours of flying time, according to the de Haviland Aircraft Co., Ltd., of England, makers of the Comet jet transport.

The anti-ozonants can be either mixed with the ingredients that go into the processing of rubber, or applied to the external surface of the finished rubber products.

In the case of the de Haviland Comets, the UOP anti-ozonant was externally applied in a 50-50 solution with white spirits.

UOP makes two anti-ozonants, UOP 88 and UOP 288. Both are dioctyl-p-phenylene diamines. Both are effective in protecting synthetic rubber.

For natural rubber, however, UOP 288 is said to be more effective under most exposure conditions.

In other polymers, such as acrylonitrile, UOP 88 is usually recommended. Even such stable batches as butyl are much more resistant to ozone cracking when a small concentration of UOP 88 is added, according to the company.

The reason for external application of UOP 288 in the de Haviland case was that there existed a large stock of air seals in the warehouse, which the company wanted to protect from ozone attack.

Nineteen planes have been fitted so far with the treated seals by Universal-Matthey Products, Ltd., UOP's British associate, following the recommendation of the British Rubber Producers' Assn.

Initial tests have proven highly successful, UOP says.

Diesel Fuel From Gilsonite

A commercial grade of diesel fuel is now being extracted from Gilsonite, the asphaltic, high-resin content solid petroleum material mined in Utah.

American Gilsonite Co., a joint affiliate of Standard Oil Co. of California and Barber Oil Corp., is expanding its refinery at Grand Junction, Colo., near the Utah border.

This is the second expansion of the plant. It was started in 1957 with a daily throughput of 650 tons. In mid-1959, this was increased to 850 tons per day (PW—Jan.2'59,p21). Now it will be increased to 1,100 tons.

In addition to 1,600 b/d of gasoline, some plant fuel, and 350 tons of calcined coke, the refinery will produce 1,300 b/d of diesel fuel. This fuel can be made substantially cheaper than the conventional product from petroleum, according to Ernest F. Goodner, AGC's president.

The diesel fuel will be used principally by the Denver & Rio Grande Western R.R., which will refuel at the refinery.

Since diesel fuel accounts for approximately 28% of the railroad's operating costs, and an additional source of economical fuel was needed, the location of AGC's refinery, just about midpoint in the system, was an important factor, according to the railroad's president G. B. Aydelott.

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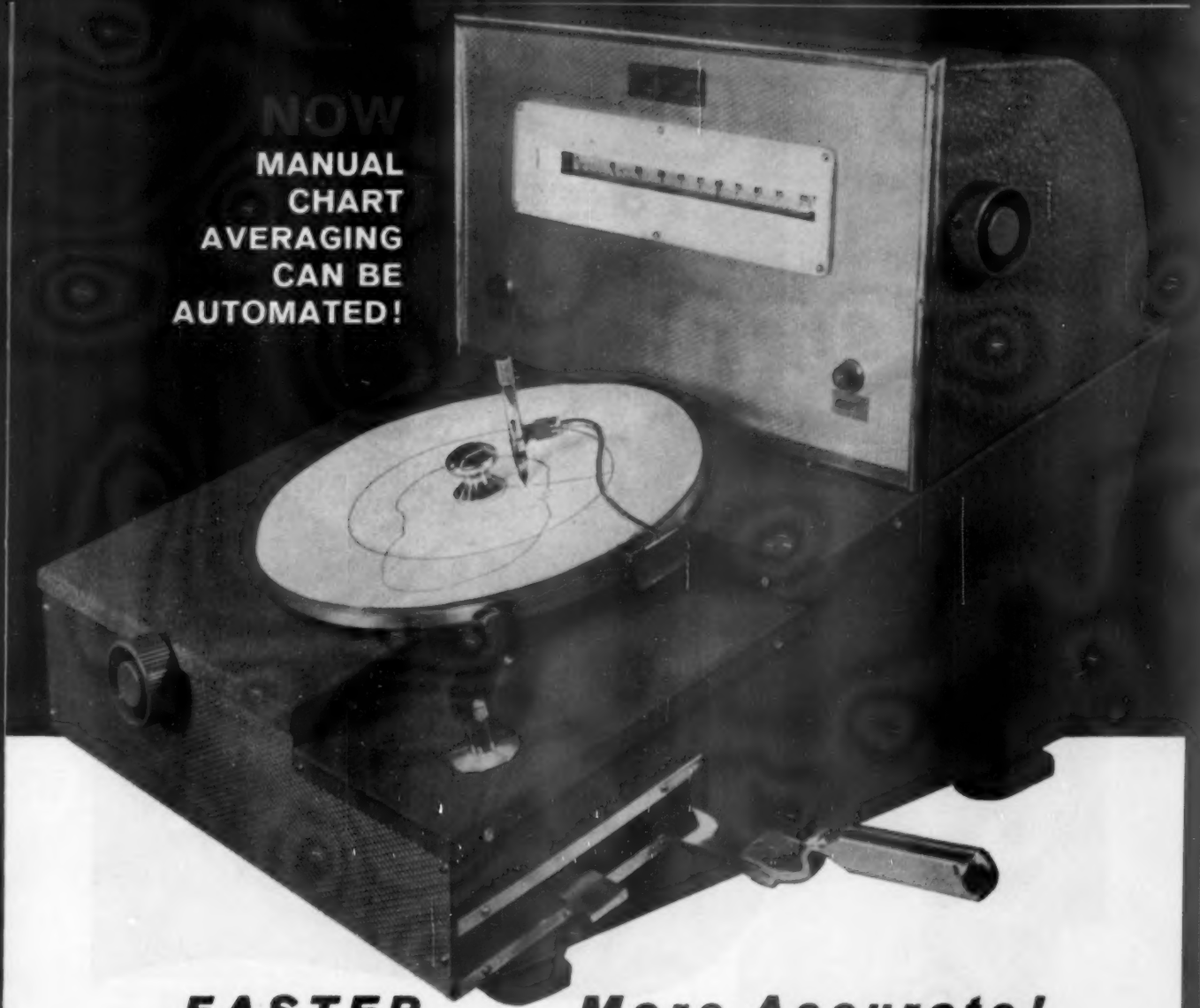

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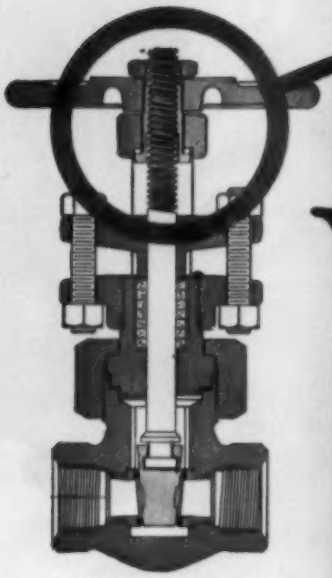

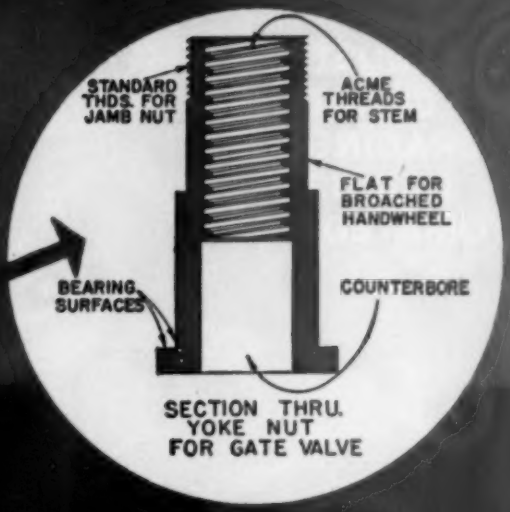

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What's New / IN PROCESSING AND PETROCHEMICALS

All output from Suntide Refining Co.'s proposed 60-million-lb.-per-year styrene unit at its Corpus Christi refinery has already been sold under long-term contracts.

Construction of the $5-million plant will begin around Nov. 1, with completion slated for the spring of 1962. The company says its capacity can be expanded to 75-million lb. when needed.

Benzene, to be used as raw material for the styrene, will come from a Udex unit at Corpus Christi, and a new Hydeal unit being constructed there (PW—Jul.1'60,p29).

•

A new process that uses epoxy paste to chemically "weld" nylon to metal has been developed by Plastic Associates, Laguna Beach, Calif.

In bonding nylon gears to metal shafts, for example, the self-lubricating qualities of molded nylon generally require a complicated mechanical interlock arrangement to prevent slippage between the nylon and the metal.

The new paste, the company says, chemically unites with the metal surface on which it is applied. A separate solvent solution applied to the nylon softens its surface and allows the nylon molecules to blend with the epoxy bonding agent as it hardens. The operation, which is completed in a few hours, is performed at room temperature.

•

DX Sunray Oil Co. plans to build an 85,000 b/d crude distillation unit at its Tulsa refinery. It will replace five units that have a combined capacity of 75,000 b/d.

•

Production capacity at Phillips Chemical Co.'s Cis-4 polybutadiene plant, now under construction at Borger, Tex., has been increased by 5,000 long tons a year, to 25,000 tons.

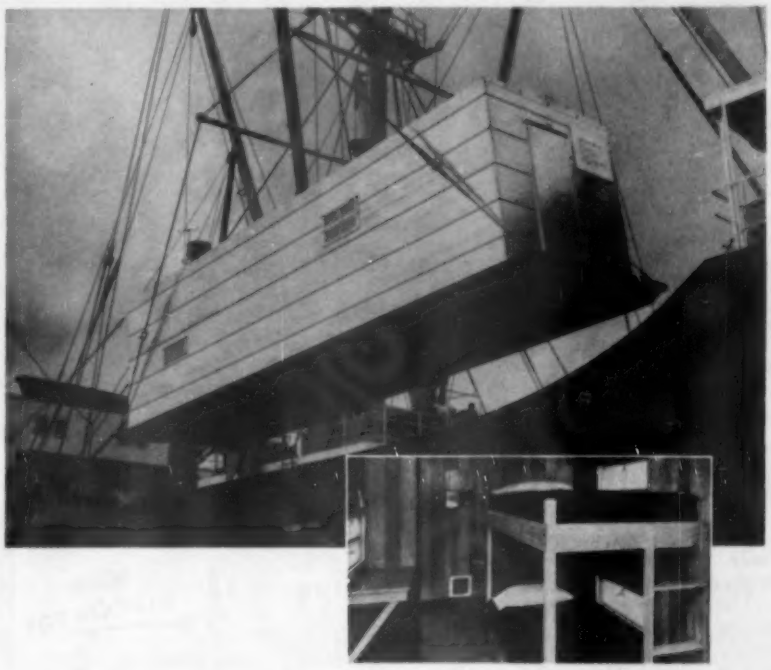
Phillips expects the plant to be in full operation at the end of this year. Butadiene is being supplied by Phillips butadiene plant, adjacent to the company's synthetic rubber plants at Borger.

The company says additional capacity is a result of increased demand for Cis-4. It also reports that Cis-4 has outperformed natural rubber in truck and passenger car tests totaling millions of miles in the past three years. It can be processed in conventional rubber equipment.

To date, Phillips has licensed its Cis-4 polybutadiene synthetic rubber process to two companies in the United States and one in Italy.

Expansion of Shell Chemical Co.'s styrene facilities at Torrance, Calif., will raise capacity to 210-million lb. per year. Completion is expected in 1961.

Shell has been in the styrene market since 1955, when it acquired the synthetic rubber complex at Torrance from the U.S. government.



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Venezuela Ups Ante for Its Oil Firm

CARACAS—Venezuela's Congress has doubled the appropriation for the national oil company's initial working capital for fiscal 1960-61, to $1.5-million.

The action followed political criticism of the original $750,000 appropriation as "insignificant."

The new figure is still modest, viewed in relation to the $195-million valuation which Oil Minister Juan Perez Alfonzo places on the Venezuelan Petroleum Corp.'s 350,000 acres of development tracts. It is about enough to drill two wells in Lake Maracaibo.

Beyond the initial appropriation, Perez told PETROLEUM WEEK, any additional capital needed will be raised by selling bonds to oil workers who have offered to help finance the company.

No date has yet been set to start operations of the company.

Selection of directors and hiring of other personnel are still in progress, with preliminary operating arrangements being handled by personnel of the Oil Ministry.

In the meantime, payroll cutbacks by private oil companies in Venezuela are making it easier to staff the company.

"There aren't so many jobs in private industry any more," Perez observed in commenting on reported difficulties in competing with private companies for qualified personnel for VPC. "The situation has changed."

The Oil Minister recently denied charges that establishment of the national oil company contradicts official Venezuelan policy of lessening the country's dependence on oil.

"That doesn't imply that production must be left in the hands of private companies," he explained. "Since production is expected to increase at a moderate rate, the national oil company can participate in this increase."

He also denied that the company is a "political" venture.

Perez explained that his role in the company will be supervisory. He will meet with the Executive Board at least once a month to see that plans are being carried out.

But he emphasized that administrative responsibility will be vested in executive directors who are in day-to-day contact with operations.

The company is attached to the Oil Ministry. Its organizational chart is topped by a Board of Directors—headed by the Oil Minister or his representative—which is responsible for over-all policy and long-range planning.

In direct charge of administration will be an Executive Board made up of a general director and three other directors, appointed by the directors.

The Venezuelan Petrochemical Institute—also attached to the Oil Ministry—has been reorganized along the same lines as VPC to give it more administrative independence.

New Mobil Find Has Good Potential

Mobil Oil has a small, but potentially important, oil discovery in south-central Turkey.

The new producer, known as Bulgardag 1, flowed 240 b/d of 36-gravity oil on drillstem test before acidizing and fracturing. The producing formation was encountered at approximately 4,700 ft.

An important factor is that the wildcat is located only 40 mi. from Mersin, where Mobil is building a 65,000 b/d refinery in cooperation with Shell and British Petroleum.

Mobil has a 56% interest in the refinery project, which is expected to go on stream next year.

The route from the wildcat to the refinery (map), is "all downhill," Mobil engineers have noted. Thus, transport of oil from the discovery area to the refinery would be relatively easy and inexpensive.

Another plus value is that the oil from the find is of a higher gravity and better quality than that produced from most Turkish wells, Mobil says.

Turkish crude tends to be heavy and sour. An example is the oil produced in small amounts from the three-well Kahta field of American Overseas Oil Co. The 11-gravity, high-sulfur crude has found only limited commercial use.

Another reason that the discovery is interesting is Mobil's dominant marketing position in Turkey.

Mobil reportedly is the biggest marketer in the country. A commercial field near a refinery will give it a wholly owned local source of crude to serve its Turkish customers.

Mobil's find is only the second discovery made in Turkey since the present exploration spurt got under way in 1956.

Twelve majors and independents joined in the search, but the years have brought mostly disappointment. Of some 35 wildcats drilled by foreign companies since 1956, the only previous discovery was the Kahta find.

There are indications, however, that another find may be in the making in Thrace, the European section of Turkey. Shell, in partnership with Deilmann, a German firm, has encountered oil and gas shows at around 8,850 ft. in the No. 1 Kuleli wildcat.

Turkey has an over-all demand of around 37,000 b/d. In addition to the Amoseas field, it has some 7,000 b/d of production from three small fields operated by Turkish Petroleum Co., a government operation.

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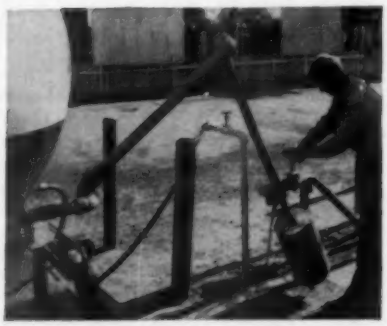

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Solution: Working with a Chiksan representative, a dual all-metal loading arm was installed. This dual arm hook-up permits unloading the 5,050 gallon transport thru a 3-inch suction pump in approximately 50 minutes. For loading smaller service trucks, single Chiksan loading arms were installed.

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Egypt Putting Up Big Money For Oil Expansion Projects

CAIRO—Egypt plans to spend $229.6-million on petroleum projects in the next five years, according to its over-all development plan.

Abdul Latif Baghdadi, Vice-President and Minister of Planning, announced the details last week.

Of this, $44.8-million will be used for exploration and production. An additional $184.8-million will go for refining, transportation, and industrialization projects for petroleum products.

The plan envisions a 135% boost in crude production by 1965.

By that date, production is expected to total 8-million tons per year, compared to 3.4-million tons in 1959. The country currently has production in oil fields along the Gulf of Suez.

Refining capacity would be boosted 86% under the plan, from 3.5-million tons a year in 1959 to a projected 6.5-million tons by 1965.

A sixfold increase, from 200,000 tons a year to 1.2-million tons, is planned for the Mex refinery, at Alexandria, in which Caltex has a 14% interest. The refinery now consists of an atmospheric distillation unit and a catalytic reforming unit.

The government refinery at Suez, which was recently expanded to 1.2-million tons a year, will have its capacity boosted to 2.2-million tons by 1965.

Targets for products for 1965 as compared with 1959 are as follows (in thousands of tons): gasoline, 657 and 341; kerosine, 797 and 291; gas-oil, 232 and 200; diesel oil, 461 and 150; residual fuel, 3,848 and 2,058; asphalt, 280 and 129; LPG, 66 and 16; lubricating oils, 66 and zero; other products, 132 and 88.

A total of $98-million for improvement and enlargement of the Suez Canal, to permit deep-draft tankers to transit the waterway, is also planned.

Another transportation item is the $10.6-million scheduled for building new product pipelines between Cairo and Alexandria, between Suez and Cairo, and between Cairo and the industrial complex at Helwan.

Petroleum development will raise the national income by $156.8-million and provide additional jobs for 7,300 persons, it is estimated.

Phillips May Quit Jordan Search

BEIRUT—Six dry holes and $7-million dollars later, Phillips Petroleum Co. is thinking of giving up its exploration concessions in Jordan, according to reports here.

Although Phillips has told the Jordanian Ministry of Economy it may resume wildcatting after reconsideration of geological data, informed sources in the area believe the company is more likely to decide to move out entirely.

Phillips' latest wildcat, to the southeast of the Dead Sea, was abandoned below 14,000 ft. recently.

Drillers encountered salt "all the way from the grass roots down," it is reported.

Phillips started its exploration program in 1957 jointly with Pauley Petroleums, from which it later obtained full rights to the concession acreage. It spudded its first wildcat in December of that year, and also drilled a hole in 1958 and three in 1959.

The latest dry hole was drilled on new acreage obtained early this year from the Jordanian government.

Jordan has no oil production at present.

Esso's Loss Doubles In German Market

BONN—Esso A.G. lost almost twice as much money in 1959 as in 1958—a prime example of the straits refining and marketing companies are in today, worldwide.

The German affiliate of Standard Oil Co. (N. J.) dropped $8-million last year, compared to a loss of only $4.6-million the year before.

The increased deficit was attributed to price cutting in combination with higher operating costs by the company's annual report.

The loss came despite increases in total sales volume and in income from sales.

The company sold 7.3-million tons of products in 1959—24% more than in the preceding year. Income rose 16% to $524-million.

Throughput at Esso's two refineries went up almost 90%, and crude imports rose about 72%. Finished product imports declined to less than half the 1958 level.

The figures: Refinery runs, 5.1-million tons in 1959 and 2.7-million in 1958; crude imports, 5.5-million tons and 3.2-million tons; finished products imports, 0.8-million tons and 1.7-million tons.

Esso began the manufacture of petrochemicals at its Cologne refinery at the end of 1959. The firm also began work on a new research laboratory at Hamburg, to be completed this year.

CFP Boosts Sales in Europe, Africa

PARIS—Substantial advances in marketing were registered in Europe and Africa by France's international major, Cie. Francaise des Petroles, during 1959.

While CFP gave few details of its operations, its annual report, which has just been released, made these points:

- **France**—Total sales of petroleum products by CFP affiliates in France were increased 28% over 1958.
- **Western Europe**—Petroli Aquila, Italian affiliate, sold 6.4% of all gasoline and high-test motor fuels marketed in Italy last year. The advance of sales in Germany, Belgium, Holland, and Switzerland was reported as good.
- **Africa**—Sales were up 20% in the nations of the French Community of West Africa and in the Union of South Africa, despite what the company called a certain slackening of activity during the last part of 1959.

In all, the company invested 6.5-billion francs ($13.3-million) in new distribution facilities last year.

CFP bought interests in some distributing companies operating in Italy. It also reported that it now holds nearly all the shares of its Swiss affiliate, Cie. Francaise des Petroles Total Suisse.

What's New / AROUND THE WORLD

JAPAN—Soviet crude from the Sakhalin Islands will be imported by Taiyo Oil, a small Japanese refiner.
The Japanese firm has agreed to take 50,000 tons of the crude with shipments to begin at the end of July and continue through November.

•

IRAQ—Oil production reached a record high in Iraq in June.
The month's production averaged 996,662 b/d, up 4.3% over the previous record of 955,056 in May. In June of 1959 it was 819,856 b/d.

•

ETHIOPIA—Russia reportedly has lost the right to build Ethiopia's first refinery at Assab on the Red Sea.
Reports from Addis Ababa say Emperor Haile Selassie has withdrawn an agreement for the building and supplying of a 1.8-million-ton-per-year plant on the ground that it would make Ethiopia entirely dependent on Russian crude.

•

FRANCE—With a heavier flow of Algerian crude this year, French oil production in June was triple the level of the same month of 1959.
Algeria supplied 137,659 b/d of the June, 1960, total of 192,781 b/d. Metropolitan France's share was 38,449 b/d and West Africa's 16,673 b/d.

•

ALGERIA—Three French companies have filed applications for four new blocks of Sahara acreage.
Copefa has asked for 4,325 sq. mi. in Oasis and Saoura Departments; Cie. d'Exploration Petroliere 424 sq. mi. in Oasis Department, and Coparex 520 sq. mi. in the Oasis Department.

•

IRAQ—East Germany has agreed to buy crude and products from Iraq under a trade protocol just signed. The agreement is designed to increase business between the two countries.

•

IRAN—The Consortium is redrilling its No. 2 Mand coastal wildcat after deviating the hole at 6,175 ft. It is also below 7,822 ft. in No. 2 Suru, another coastal wildcat, and the first at the extreme eastern end of its operating area. Inland, closer to established fields, it is below 6,222 ft. in No. 5 Pazanun, its third current wildcat.

•

ITALY—ENI will build a $64-million petrochemical complex at Ferrandina in Southern Italy.
The state-owned company will supply the plant with natural gas from discoveries in the immediate area. ENI also has two other petrochemical plants in operation in Italy.

•

EGYPT—An offer from Pan American International is among "more" bids received for Western Desert oil rights, Cairo's Ministry of Industry announced. Other bidders haven't yet been officially disclosed. Deadline for the bids is mid-August.

•

POLAND—East Germany will finance construction of Poland's 455-mi. section of the major Soviet crude oil export line to East Germany. Poland will get a ten-year credit, mostly in goods, including pipe. It will repay partly in goods and partly in cash due for the eventual transport of oil to East Germany, one of five satellite countries to be linked by the 2,500-mi. system.

•

USSR—The Russians say they're building up a "Third Baku" oil and gas area in Uzbekistan, where reserves are claimed to be comparable in size to those of the Middle East. Ten fields are said to be ready for production, with per-well gas yield as high as 105.9-million cf/d and crude flow at over 1,000 b/d.

•

SYRIA—International tenders for exploration in Syria will be invited next month by the UAR's General Petroleum Authority, Wagih Samman, industrial minister of the Syrian Region, UAR, announced last week.

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SYRIA—Concordia has a third oil discovery in its concession area in northeast Syria. Oil was found at a depth of 9,300 ft. in the No. 2 Sweidia. Test rates were not announced.

•

PAKISTAN—The Pakistani government will join four oil firms in a company to build a 30,000 b/d refinery near Karachi.
Oil firms participating in the $33-million project are Shell, Burmah Oil, Standard-Vacuum and Caltex.

•

PAKISTAN—Attock Oil Co. has found oil in a third horizon in its oilfield at Dhulian, West Pakistan, according to the government's Oil Ministry.
The discovery is in Jurassic sandstone below the 9,000-ft. mark. The other producing formations are in Eocene limestone.
The new pay will add about 500 b/d to the present 2,900 b/d produced in the field, the company estimates.

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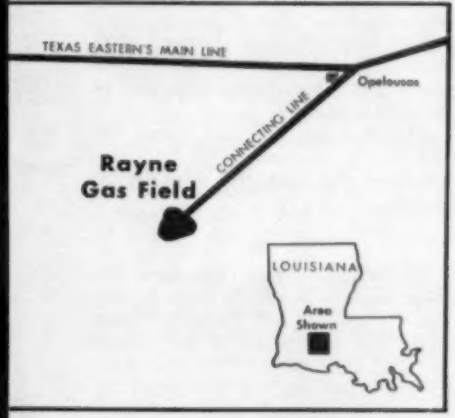
FRANCE—A new discovery has been made in the Paris Basin by Cie. Petroles du Su Est Parisien (Copesep). The well tested at the rate of 144 b/d from 4,698-757 ft. It is about 22 mi. southwest of the firm's St. Martin de Bossenay field.

Shell to Expand In Central America

Shell Oil plans expansion of its marketing activities in Central America through the organization of new affiliates in El Salvador, Honduras, Nicaragua, and Costa Rica, the company announced last week.
Until recently, Shell affiliates have marketed only in Panama and British Honduras, although some Shell products were sold in other countries of Central America.
The company will supply its markets from a 10,000 b/d refinery to be built at Acajutla, San Salvador, and a 4,000 b/d installation now under construction at Puerto Matias Galvez, Guatemala, in which it has an interest.

Gas Field Ownership Details Outlined

TEXAS EASTERN'S GAS PLANT (above) is in Louisiana's Rayne field.



The official opening this week by Texas Eastern Transmission Corp. of its Rayne (La.) gas processing plant climaxes the first venture by a pipeline company into ownership of an entire gas field, plus all its production and processing facilities.

The $134,395,700 purchase was made last year from Continental Oil Co., Sun Oil Co., General Crude Oil Co., and M. H. Marr, Dallas.

It included all the producible reserves of the Rayne Field, together with its wells and gathering lines. Under the purchase, however, the former owners are entitled to a production payment equal to the value of the liquids in the field, minus processing costs.

Deliveries from the field commenced last September (PW—Sep.11'59,p35).

Texas Eastern estimates gas reserves of Rayne Field at 1-trillion cu. ft.

The field produces from 21 wells. Most of the gas comes from the Nodosaria "A" formation at depths of from 13,650 to 13,890 ft.

Advantages of ownership of an entire field, with all its producing and processing equipment, far outweigh its burdens, according to John F. Lynch, president of La Gloria Oil & Gas Co., the TET subsidiary that operates the field.

As compared with doing business on a gas-purchase contract basis, says Lynch, total ownership and control provide these benefits:

- Greater flexibility in accumulating additional gas supplies as pipeline capacity is increased.
- A higher degree of control to meet such emergencies as sudden boosts in demand.
- Freedom from take-or-pay provisions, which require a purchaser to buy gas from all producers in a field or, if he doesn't, to pay for it anyway.
- Elimination of price uncertainties due to escalation clauses.

On the other hand, ownership of a field can also pose new problems for a pipeline company.

In the case of the Rayne Field purchase, these include an obligation of Texas Eastern to develop the leases and to deliver the liquid byproducts to the former owners each month as part of the payment.

Not all gas fields are suitable for purchase in their entirety by a pipeline company, Lynch explains.

The following conditions are necessary, he says, to make such a venture feasible:

- Reserves and rate of production must be adequate to justify the initial high investment.
- Reserves must be free of long-term commitments and owned by only a few individuals.
- The field should be reasonably close to the purchaser's main pipeline.

Texas Eastern doesn't fractionate the liquids obtained from its gas at its plant. It ships them in a "product mix," which is becoming a new practice at processing plants.

Capacity of the plant is 176-million cf/d of gas. It was built for TET by Brown & Root, Inc., at a cost of $3,855,000.

For every 1-million cu. ft. of gas, TET says, it recovers 28 bbl. of deethanized propane-butane mix, and 58 bbl. of separator liquid with vapor pressure of 5½ to 6 psi.

Recovery efficiencies are said to be 75% for propane, 95% for butanes, and 100% for heavier hydrocarbons.

The liquids are delivered by pipeline to the Lake Charles refinery of Continental Oil Co., and to the Egan (La.) plant of Acadia Corp., for processing for Sun Oil Co.

The remaining dry gas is moved via a new connecting line to TET's main transmission line at Opelousas, La.

Texas Eastern says it's using a minimum of equipment at the wellhead—only chokes and flow-line heaters.

A bank of separators—one for each well—is located at the edge of the plant site.

Gas and liquids go through these separators, and then the gas from all of them is combined.

The combined gas then moves through four low-temperature separators, and liquids recovered are pumped into a 1,250-psi. flash tank.

Flash gas mixes with the gas stream and the mixture is fed into absorbers. Meanwhile, the liquids are flashed twice more, at 525 psi. and 210 psi., and fed into a 185-psi. stabilizing tower. The resulting stabilized liquid, with a vapor pressure of 5.5 to 6 psi. is then sent directly into storage for delivery to customers.

The gas stream continues on into the processing plant for recovery of propane and butane.

The plant uses heat alone, rather

than stripping steam or stripping gas, to remove the liquids.

In its still, temperatures are pushed to above 590F to extract the by-products.

The heat is supplied at both the bottom of the still and the fourth tray below the feed tray.

The absorption oil is then withdrawn at both points, pumped back through direct fired heaters, and recirculated.

'Double Taxation' Hit in Texas

A pipeline company and an oil company have brought suit against Hardin County, Tex., on a charge of double taxation on pipelines in the county.

The case will be heard in the state district court in Hardin County. Trial is expected to start early this fall.

The companies are West Texas Gulf Pipe Line Co. and Gulf Refining Co., both affiliates of Gulf Oil Corp.

Ligitation between the companies and the county dates from 1957, when their pipeline assessments were boosted 13%.

Requests for temporary injunctions were denied in the lower courts, and the decision was upheld by the State Supreme Court.

The companies are asking that intangible taxes, apportioned according to county by the state, be credited to the ad valorem taxes levied by the county.

An ad valorem tax is a levy on property based on its assessed value; an intangible tax is a tax on assets other than tangible property.

The companies do not contest the right of the county to assess the intangible tax. However, they do contend that the intangible tax, as apportioned to the county by the Intangible Tax Board, at Austin, should be credited to them as part of their ad valorem tax.

The companies also claim that their property valuations have been set too high by the county.

Inequitable valuations are charged for the years 1957, 1958, and 1959.

Last year the companies and county were far apart on valuation of tangible assets.

West Texas Gulf set a value of $193,650 on its physical property, as compared with $621,660 established by the county.

Gulf Refining valued its tangible assets at $166,900, while the county assessed them at $726,800.

A 34.26-mi. section of the 466-mi. West Texas Gulf line runs through Hardin County. The pipeline company is owned by Gulf Oil Corp. (which is the operator), Empire Gas & Fuel Co., Pure Oil Co., Standard Oil Co. (Ohio), and Sun Pipe Line Co.

Gulf Refining, owned by Gulf Oil Corp., has several 6-in., 8-in., and 10-in. lines in the county.

In the case of intangible assets, the companies and the county were in agreement. West Texas Gulf's were valued at $313,860, and Gulf Refining's at $159,850.

A victory for the companies could weaken or cause revision of the state's existing pipeline evaluation schedule.

The schedule, worked out by the state and pipeline companies many years ago, established set values on a per-mile basis for different size lines.

Its value has been that it has provided companies with a guide in evaluating property.

Some industry sources feel that if the two companies should win their plea for lower assessments, companies generally might abandon the schedule.

Robot Telephone Relays Flow Data

An electronic telephone system that checks flow-meter readings on request has been put in operation at two pump stations by Marathon Pipeline Co.

Marathon says its new device—called a "digital to audio translator accumulator"—cuts from hours to seconds the time required to take the readings.

The system operates this way: A dispatcher at Marathon's Findlay (Ohio) headquarters dials the station by telephone. At the signal, the station identifies itself through a prerecorded tape on a drum, which then rotates.

From among a selection of playback heads, the one corresponding to the current flow reading is actuated by a digital counter and the reading is transmitted, by prerecorded human voice, to Findlay. The call takes 16 to 25 seconds, whereas driving round trip to the nearest station took two hours, Marathon says.

Marathon expects to have 100 of the instruments in use along its 5,600 mi. of crude and products pipelines within a few years.

What's New
IN TRANSPORTATION

Peace River Oil Pipe Line (B.C.), Ltd., has backed out of building a $9.5-million pipeline in northeastern British Columbia that would have carried crude from that area to Pacific Coast markets. A British Columbia permit was granted last year; construction was to begin Aug. 1.

The company says it surrendered its permit because of a condition specifically providing for diversion of British Columbia crude to any future pipeline that might be built entirely within the province. Peace River planned to serve local refineries and then take surplus crude to the Pacific Coast.

The provincial government says three defeated applicants, Gibsons Associated Oils, Ltd., Trans-Prairie Pipelines, Ltd., and one undisclosed company, still want to build a pipeline in the area, but would not supply U.S. Pacific Coast markets, at least at first.

•

Pacific Gas & Electric Co. is developing an underground natural gas storage field which, it says, will be the nation's largest.

It will have a working storage capacity of 30-billion cu. ft., and a daily deliverability of 400-million cu. ft.

The storage project is located in the nearly depleted McDonald Island gas field, in California's San Joaquin River delta.

PG&E will begin delivering about 75-million cf/d from the site in November. The project will be completed late in 1961.

•

Tank trucks carrying petroleum products may soon be carried piggyback by the Chicago & North Western Ry.

The railway says results of tests made with the Assn. of American Railroads' bureau of explosives will probably open the way for tank truck shipments on flat cars of "restricted" liquids as well as of "nonrestricted" commodities. The railroad believes piggyback transport of restricted liquids is safer than highway transport.

•

The sixth tank truck transportation course will be given Sept. 13-16 at Purdue University, Lafayette, Ind. It is sponsored by the National Tank Truck Carriers, Inc.

Marketers Ponder New Antifreeze Trend

Long before the first frost of autumn, oil marketers have been forced to think about antifreeze this year. Their concern centers on three new products.

The main features of all three products is improved protection against corrosion and the fact that they also operate as coolants during the summer. To the marketer, this means longer product life.

Du Pont says its Telar never needs draining; in fact, that it may well last for the life of an automobile. Dow Chemical Co. claims to have produced "the first all-year cooling system fluid for automotive engines." And with its Long Life Prestone, Union Carbide Corp. offers "extra-long protection" beyond the usual guarantee period of one winter season.

Oil marketers are somewhat concerned about the effect of the long-lasting feature of these new products.

With the accent on "year-round," "never drain," and "long life" coolants, some oil marketers fear that the clock will be turned back 15 or 20 years, to the time when they tried to convince motorists that "permanent" antifreeze still had to be drained out in the spring.

Antifreeze has long played a pivotal role in the servicing of cars for spring and fall changeovers. The current trend in antifreeze could pose a renewed threat to this important sales opportunity, some marketers fear.

The antifreeze manufacturers, however, offer compensating features, which may mean more profits for service station dealers. Among them:

- The likelihood that a greater share of the antifreeze market will accrue to dealers: All three of these products will be sold only through service stations and automotive garages.
- Increased dollar profits for dealers.
- A premium product to offer motorists who wish to take utmost care of their cars.

Du Pont points to two market conditions that justify the need for a premium, long-lasting antifreeze and summer coolant:

(1) Price-cutting cash-and-carry stores have already chewed up 45% of the antifreeze market.

(2) Nearly 40% of the nation's motorists fail to drain out their antifreeze in the spring.

Dow estimates that between 30% and 35% of the nation's car owners take enough pride in their cars so that they would prefer a premium product with which to have their cars serviced.

There are pessimists among the oil marketers, however, who doubt that the new coolants will make a big splash this year. They point to these factors:

- The products are high priced. (The average motorist must pay $8 to $12 to service his car with any of the new products, twice as much as he would pay for conventional "permanent" antifreeze.)
- Despite the caution of the manufacturers, oil marketers say that the new products will eventually follow their predecessors into the discount stores. (All three antifreeze makers regret that they can't prevent their distributors from selling to discount houses if they want to.)
- Dealers will be hesitant to stock additional types of antifreeze, and may take a limited amount only to answer specific requests.

Even one of the manufacturers—Union Carbide—refuses to grow ecstatic about its long-life product. It frankly tells service station dealers that its conventional product, "for the vast majority of motorists, continues to be the surest way to prevent freeze-ups and engine burn-outs due to rust."

Carbide plans to boost its advertising budget for antifreeze this season, but only 15% of it will be devoted to Long Life Prestone. The bulk will be used to protect the market position of conventional Prestone, which is the nation's top-selling brand.

Automobile manufacturers are noncommital about the long-life antifreezes, a spot check reveals.

Dowgard's main feature—de-ionized water—is seen by Detroit as an improvement on tap water, especially in sections of the Southwest where the chlorine content of tap water is high. (Dowgard represents a "complete fill"—no water can be mixed with it.)

Since the prescribed drain periods of both Dowgard and Long Life Prestone may be shorter than many motorists follow already, Detroit is

not disturbed by these two product innovations.

As for Telar's never-drain feature, a spokesman for one automaker notes that the product contains a built-in warning to motorists, which turns yellow whenever the product needs to be drained. In practice, he believes, this will turn out to be every two years.

Du Pont says, however, that less than 1% of all cars will experience this color change. In fact, Du Pont says, it took six years of testing, on more than 300 cars, before it found a car that produced enough contamination to turn Telar yellow.

One aspect of the long-lasting antifreezes that needs more explanation, many oil marketers feel, is the effect on octane requirements.

For many years, oil men have come to expect an increase in octane requirements whenever motorists neglected to drain the antifreeze from their cars in the spring. "Ethylene glycol [base for almost 90% of the antifreeze sold today] can't carry away heat as fast as water can," is the way one oil company puts it.

But as far back as 1956, Du Pont says, it found that Telar—then in the test stage—"removes engine heat practically as well as water" and that "fuel octane requirements are the same" for cars using Telar solutions as for those using water.

A few oil companies say they are ready to enter the market with their private brands of long-life antifreeze if the new products usurp as much as 5% of the market.

Thus far, only two major oil companies have contracted with Du Pont to sell Telar. One of these, however, is selling it only in New York State, where its division management had decided on Du Pont's products long before Telar was announced.

The other company is selling Telar throughout most of its marketing territory (except New York State), primarily because it represents a large dollar profit to its dealers—$1.65 compared to a maximum of $1.25 for conventional antifreezes.

In the final analysis, the market showing of the new products will be proved at the service station level.

Dow started last spring to get to the dealer quickly through a strong distributor system. And Du Pont is putting "the largest advertising budget ever" behind Telar.

Carbide, on the other hand, admits that it entered the race merely to compete with Du Pont, and says it is still not convinced that the public really wants a long-life antifreeze.

What's New / IN MARKETING

Wishbone Link Delayed

The wishbone interchange—hailed in Ohio as a safeguard to free enterprise on interstate highways (PW—Jun.24'60,p88)—received a minor setback last week.

It cannot be fully utilized on interstate highway 71, where it was to be introduced. Federal highway authorities refused to permit the Ohio Highway Dept. to link the wishbone service areas with the existing exit ramps of the interstate highway.

Reason: Ramp speeds cannot be reduced enough to permit safe entry into the wishbone areas directly from the highway.

On future interstate highways, however, ramps will be lengthened, permitting a gradual slowing down into the service areas. As for interstate 71, motorists will have to drive completely off the ramps and on to the intersecting road before reaching the wishbones.

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Tennessee Oil Refining Co. is moving its Bay brand north into Tennessee, after making extensive inroads in the Gulf states, Georgia, and South Carolina.

The company, a division of Tennessee Gas Transmission Co., has begun construction of an 85,000-bbl. products terminal in Knoxville, Tenn., where it will connect with the terminus of the Plantation pipeline.

The terminal will supply independent jobbers, and service stations planned for the Knoxville area, where two Bay stations are already under construction.

•

"Take to the Road in Fun" is the theme of a new ad campaign to spur more pleasure driving by Ashland Oil & Refining Co.

The multi-media campaign is a response to API's efforts to get oil companies to participate in an industry-wide program to boost over-all demand.

•

Gulf Oil Corp., fresh from its leap to California with the purchase of Wilshire Oil Co. (PW—Jul.8'60,p94), is already hinting at expansion into Oregon and Washington.

Such plans, however, are categorized as "down the road," by R. D. McGranahan, Wilshire's new president. Wilshire will also look into the West Coast petrochemical market, he says, with particular attention to benzene and naphthalene. Meanwhile, Wilshire's 35,000 b/d refinery will be geared for increased gasoline production.

•

Some Alabama state legislators are considering utility-type control of the sale and pricing of petroleum products. Only reported reason: Gasoline prices vary from country to country, even though taxes remain the same.

The idea of subjecting oil marketing to the supervision of the Alabama Public Service Commission has emerged from the year-old legislative committee that is studying oil pricing in the state.

Also under investigation are reports that oil companies are discriminating among jobbers, and posting misleading and false advertisements.

•

Ohio Oil Co. is expanding its marketing territory eastward into the Cleveland-Akron area.

Last week, the first load of Marathon refined products moved out of Ohio Oil's new 195,000-bbl. terminal at Brecksville, in the Cleveland suburbs.

In the near future, the company will be shipping these products to newly built stations in the area, for which it is already purchasing sites. In addition, Ohio Oil plans to buy existing stations and convert them to the Marathon brand.

At present, the eastern limit of marketing of Marathon products is Medina—15 mi. west of Akron.

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Gulf Petroleum S.A. is joining the marketing rush to Puerto Rico. It expects to open its first station there within three months.

Late last year, Mobil Oil Caribe, Inc., opened its first stations in Puerto Rico. More recently, Sinclair Caribbean Oil Corp. and Standard Oil Co. of California have revealed plans to market gasoline there.

Gulf plans 20 stations for the island by 1961, at least three of which will be located in San Juan, the island's capital.

J. G. Orton

K. L. Byerly

K. L. (Ken) BYERLY is the new vice-president, domestic sales, and **JOHN G. ORTON** is the new vice-president, export, for the Security Engineering Division, Dallas, one of the Dresser Industries. Byerly has switched to Security from another Dresser affiliate, Magcobar de Venezuela, where he was vice-president and general manager. He joined Magnet Cove Barium Corp., the Venezuelan company's parent, in 1948 as a field engineer in the Louisiana-Arkansas territory. Byerly also organized and developed Texoma Mud Co., a Magcobar distributorship in Sherman, Tex. Orton comes to Security after nine years with Reed Roller Bit Co. as division sales manager in Venezuela, Peru, Ecuador, Colombia, and the West Indies, and as division sales manager, Eastern Hemisphere, in London. He was also with National Supply Co. in Venezuela.

HOWARD S. GLEASON has been named vice-president, manufacturing, for Southwestern Industrial Electronics Co., Houston, one of the Dresser Industries. He was formerly assistant to the president. At the same time, the company announced it would expand into industrial markets other than oil, and into the military market. **John C. Black, Jr.**, has joined SIE as manager of the field service department. He was formerly with Federal Electric Corp., Paramus, N. J.

H. S. Gleason

E. F. Snow

EARL F. SNOW becomes operations manager for the Baash-Ross Division of Joy Mfg. Co., in Houston. He will supervise manufacturing facilities in Houston, Oklahoma City, and Canton, Ohio. **James L. Ward** is the new Baash-Ross district sales representative at Edmonton, Alta. He will handle sales in northern Alberta and British Columbia. Ward, who has been with Baash-Ross since 1956, was most recently located in Casper, Wyo.

H&S SERVICE CO., Greggton, Tex., has been appointed sales and service dealer for Maloney-Crawford Tank & Mfg. Co. The new dealer will maintain an inventory of equipment and provide service for the East Texas area. Maloney - Crawford's Houston branch and division offices will also provide supplemental field service in East Texas. **L. C. Hoffman** and **Raymond Sigmon** are co-owners of the dealer company, and **Allan Hanson** is sales and service manager.

WAYNE D. LUTKE has been appointed Midland district manager of the oilfield equipment division of Delta Tank Mfg. Co. The Midland branch will sell oilfield equipment direct to operators in that area. Lutke served as manager for other equipment manufacturers in West Texas before joining Delta. At the same time, **Harold R. Anderson** was named sales representative for the division in its new Casper (Wyo.) area.

W. D. Lutke

W. B. Brown

W. B. (Bill) BROWN has been named sales manager in the products branch of the Dow Industrial Service Division of Dow Chemical Co. Brown, a product manager in chlor-alkali sales at Dow's headquarters in Midland, Mich., transfers to the Cleveland headquarters of DIS. The division was organized last year to take over acid and solvent cleaning functions previously performed by the Dowell Division, and to provide consulting services and sell products in the municipal and industrial waste and water-treatment areas.

DONALD McROBB is manager of Franklin Supply Co.'s new supply store in Ft. Nelson, British Columbia, and **JOSEPH BROOKS** is manager of its new store at McCook, Neb. McRobb has worked in Franklin stores in Estevan, Sask., and Edmonton, Alta., and Brooks was most recently field salesman in Casper, Wyo.

EDWIN J. HEANEY has been elected a vice-president of Geyer, Morey, Madden & Ballard, Inc., New York. Heaney, who has been with the agency since 1952, is account executive for Sinclair Refining Co.'s public service advertising.

ROBERT C. HAMILTON has joined the Ideco Division, Dallas, one of the Dresser Industries, as treasurer and controller. He was formerly supervisor of the banking division in the finance and economics department of Texaco Inc., in New York.

G. C. Woodward

S. E. Johnson

GRANT C. WOODWARD, vice-president, marketing, for Cooper-Bessemer Corp., Mt. Vernon, Ohio, also assumes the responsibilities formerly held by **STANLEY E. JOHNSON**, who is retiring as vice-president and director of sales. Johnson, who has been with Cooper-Bessemer for 42 years, will continue to serve on its board of directors.

JAMES H. HOLBEN is the new assistant director of Bradford Laboratories, a division of Hagan Chemicals & Controls, Inc., in Evansville, Ind., with responsibility for oilfield water service. **James M. Clayton** succeeds Holben as manager of Bradford's service laboratory in Evansville. Clayton, who joined the company in 1955 as a service engineer, will be in charge of laboratory facilities and personnel, and will direct Illinois Basin oilfield service operations.

UNIVERSAL OIL PRODUCTS CO., Des Plaines, Ill., has appointed four scientists to new positions in two areas of research. **Dr. Herman S. Bloch** is the new associate director of process research; **James Hoekstra** and **Dr. Ernest L. Pollitzer** have been named research coordinators, process research; and **Dr. William L. Cox** is the new research coordinator in products research.

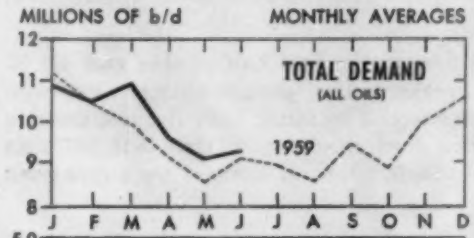
J. P. KNOPF, secretary-treasurer of Tube Turns Plastics, Inc., Louisville, Ky., has been elected a vice-president. He has been secretary-treasurer since TTP was organized in 1954 by Chemetron Corp., Chicago, and Jackson & Church Co., Au Gres, Mich. Knopf joined Girdler Corp., predecessor of Chemetron, in 1942, and was assistant to the controller before joining TTP.

J. L. RADDEN is manager of National Supply Co.'s new oilfield supply store at Roundup, Mont. The new location is under the direction of **Luther M. Miller**, manager of the northern district of the company's northwest division. Radden was formerly manager of the Glendive (Mont.) store, which is being replaced by the Roundup facility. A downwell pump service shop will be retained at Glendive.

DANIEL P. BRENNAN has been appointed technical service representative in New York City for Oakite Products, Inc. He has been on the staff of Oakite's technical service laboratory since 1957.

PETROLEUM WEEK'S

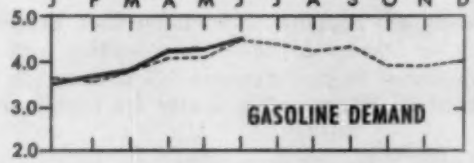
Fingertip Figures



Figures for period ended July 22, except as noted

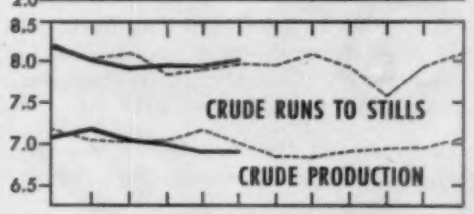
TOTAL DEMAND

Latest 4-week average	9.480
Year ago	8.979



GASOLINE DEMAND

Latest 4-week average	4.688
Year ago	4.512

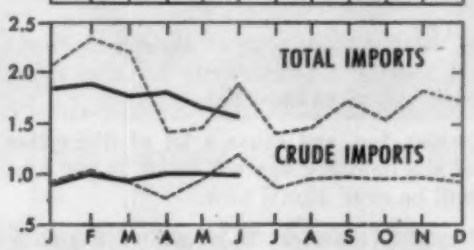


RUNS TO STILLS

Latest week	8.204
Previous week	8.257
Year ago	7.962

CRUDE PRODUCTION

Latest week	6.855
Previous week	6.852
Year ago	6.885

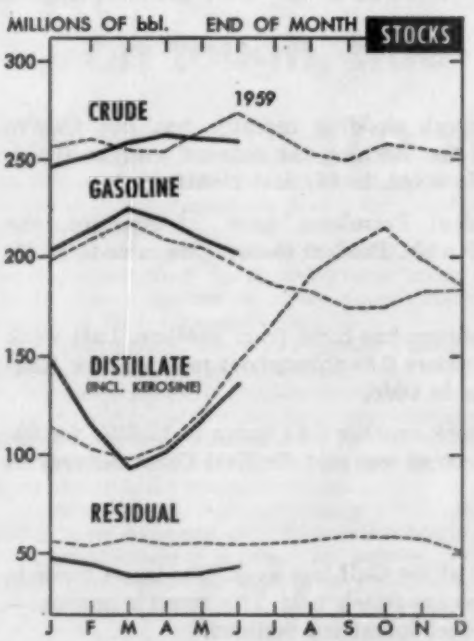


TOTAL IMPORTS

Latest week	1.631
Previous week	1.419
Year ago	1.245

CRUDE IMPORTS

Latest week	1.029
Previous week	.897
Year ago	.757



CRUDE STOCKS

Week-ended July 16	245.9
Previous week	248.1
Year ago	270.4

GASOLINE

Latest week	194.8
Previous week	197.2
Year ago	188.2

DISTILLATES

Latest week	183.8
Previous week	150.6
Year ago	165.4

RESIDUAL

Latest week	43.4
Previous week	43.0
Year ago	54.8

Refinery runs were down last week, but it was a half-hearted drop of only 53,000 b/d.

Crude processed through refineries averaged 8,204,000 b/d, up 252,000 b/d from a year ago. This is the fifth straight week that runs have averaged more than 8.2-million b/d.

Previous experience with bulging inventories obviously hasn't influenced refiners.

A year ago, abnormally high runs to stills were corrected by mid-June, in time for the normal seasonal slowdown in demand, and were kept below the 8-million b/d level through mid-August.

Actually, throughput should have been kept at least 454,000 b/d under present levels from June through October to keep gasoline stocks within the so-called "desirable" range.

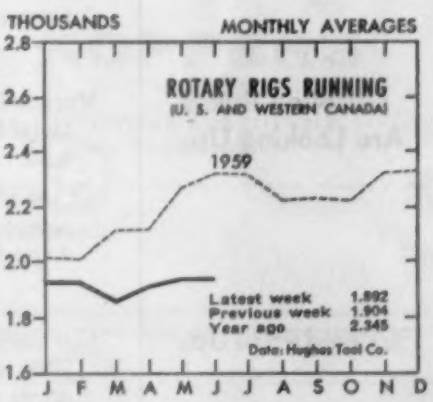
This is the opinion of one of the nation's leading oil economists, who estimates that runs to stills should average no more than 7,750,000 b/d through the entire summer to reduce stocks of motor fuel to the 156.1-million bbl. reported to the Texas Railroad Commission as the desirable inventory level on Nov. 1.

So far, the drawdown in gasoline stocks has been painfully slow.

Motor fuel inventories as of July 22 were 197.2-million bbl., 6.6-million bbl. higher than a year ago.

But there seems to be a guardian angel looking over refiners' shoulders. Demand for gasoline is setting new highs.

Gasoline demand for the past four weeks has averaged 4,689,000 b/d—177,000 b/d higher than a year ago. This has helped firm gasoline prices substantially, in the face of dangerously high runs.



The Market Trend

Outlook for Tankers: More of the Surplus

Too much too soon—that's the story of the tanker market. Tankers appear to be in a never-ending surplus. There are too many around now, and lots more on order.

The box score on the world fleet in the first half of this year is: 83 tankers added; 67 ships to the breakers. The tonnage changes, however, are much worse than these figures would indicate. Actually, additions to the world fleet totaled 2.8-million tons deadweight. Only 838,000 tons went to the junkyard. And some 300,000 tons of tankers were converted to dry-cargo carriers.

The world fleet now stands at a whopping 65.6-million tons deadweight, according to an analysis by Davies & Newman, a leading ship broker in London. The U. K. Chamber of Shipping counts 367 tankers idle for lack of cargo. Also, the fleets that are operating mostly are boondoggling along at reduced speeds.

Hardest hit in this shipping depression is the British-flag fleet, with 85 bottoms in lay-up. Liberia has 74 tankers idle. Norway has 61. The U.S. and Panama have 31 and 30 idle, respectively. Most of the idle ships were built in the war years 1942 (16), 1943 (72), 1944 (55), and 1945 (30).

Many more tankers are going to die on the vine before too long. Of the idle fleet, 88 were built before 1934. These old wrecks can't compete against their bigger and faster counterparts.

The main problem right now is what to do with all the newbuildings that are slated to hit the market shortly. Unfortunately for ship rates, there still are 398 tankers on order, yet to be launched.

The new ships will be big babies, too, and cause a lot of disruption in the existing fleet. About 320 of the newbuildings will be of 24,000 tons deadweight or bigger. And 209 will be over 40,000 tons.

So if you think you have troubles, consider the plight of the shipowner.

Refiner Margins Rose in June:

U.S. refiners have had some rough sledding recently, too, but they're breathing easier now. East of the Rockies, the refiners' margin (products over crude) rose from 56¢ a bbl. to 66¢ last month.

As computed by the Independent Petroleum Assn. of America, the average cost of crude was $3.09 a bbl. Product realizations came to $3.75.

Gasoline Prices Are Looking Up:

Much of the improvement for refiners has come from gasoline. Last week Mobil Oil hiked its tankwagon prices 0.8¢ throughout most of New England. Sohio advanced 0.8¢ to 1¢ in Ohio.

At the wholesale level, Chicago took another 0.5¢ bump to 12.625¢ for 92-octane regular. At the Gulf, a cargo was sold for East Coast delivery in August at the "full" price.

1% Resid Price Up:

Low-sulfur resid prices advanced at the Gulf last week. The latest quote is $2.55 a bbl., up 10¢, and supplies are closely held. This trend is unusual—prices have been going up as steel operations declined.

At Cities Service Oil Company's Rahway, N. J. refinery

Bitumastic Coatings outlast costly materials on tough, tide-zone piling protection

The Cities Service refinery's docking area is located on the Arthur Kill, a salt water channel with a high content of industrial wastes and debris that presents a tough corrosion problem. That's why special attention was given to the protection of sheet steel piling at the wet-dry zone.

Two types of coating systems were tried, both over sandblasted steel; one, a new type of coating using "exotic" materials, and the other, a combination of two Koppers coatings: Bitumastic® No. 50 and Bituplastic® No. 28.

Within six months, the more expensive coating was badly deteriorated, and had to be removed, while the Bitumastic coating system was still in excellent shape—and is now protecting *all* the piling. The combination of heavy-duty undercoating given by thick, tough Bitumastic No. 50 and the sunlight and water-resistance of Bituplastic No. 28 over this base was the happy answer to the specific conditions.

The right answer to many corrosion problems can be found among the ten Bitumastic coatings, since they offer a wide variety of characteristics to suit many applications. And there are three *new* coatings in the Bitumastic line that have unique properties which you may find of interest: use the coupon below for more information. Or call any Koppers Tar Products Division District Office: Boston, Chicago, Los Angeles, New York, Pittsburgh and Woodward, Alabama. In Canada, Koppers Products, Ltd., Toronto.

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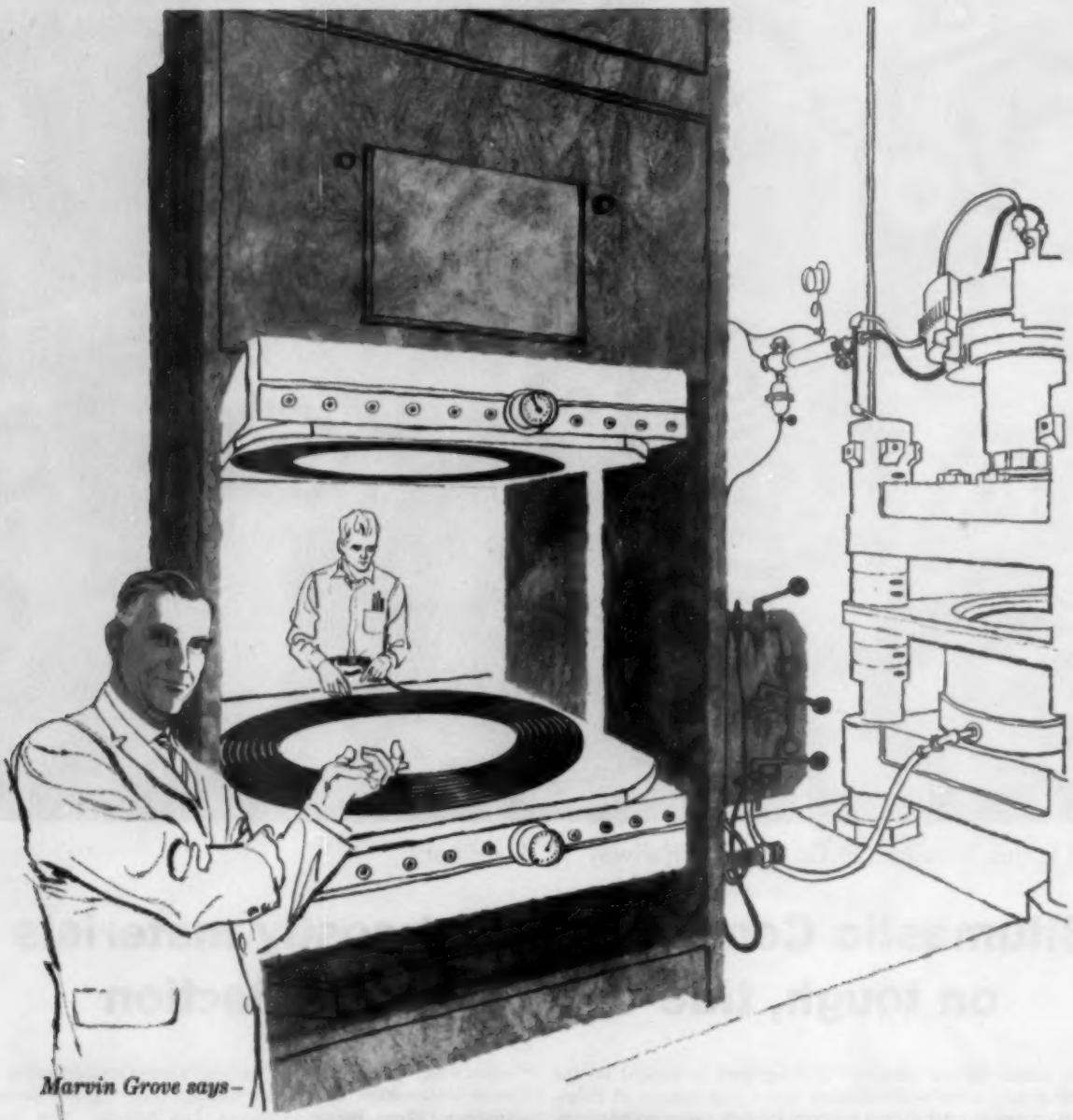

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In Western Canada: Grove Valve Ltd., Edmonton

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All prices as of July 25

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U.S. Gulf Coast, cargoes
- Gasoline, 98 oct prem....12-12.75
- Gasoline, 92 oct reg....11
- Kerosine....9-10
- Heating oil, No. 2....8.25-9
- Gas oil, 48-52, d.i....8.5-8.875
- Fuel oil, bunker "C"....$2.30

Caribbean, cargoes
- Avgas, Grade 100/130....14.75
- Gasoline, 93 oct research prem....11
- Gasoline, 87 oct research reg....10.125
- Gasoline, 80 oct research....9.375
- Gasoline, 70-72 oct motor method....9.25
- Kerosine....9.25
- Heating oil, No. 2....8.125-8.25
- Gas oil, 48-52 d.i....8.375-8.5
- Fuel oil, bunker "C"....$2.00

New York Harbor, barges
- Kerosine....9.8-10.3
- Heating oil, No. 2....8.8-9.3
- Fuel oil, No. 6....$2.62

Okla.-Group 3, northern shpt., bulk
- Gasoline, 91 oct reg....12-12.75
- **Kerosine....9.875†-10.125†**
- **Heating oil, No. 2....8.5†-9**
- Fuel oil, No. 6....$1.80-1.90

Chicago, bulk
- Gasoline, 91 oct reg....12.5
- Heating oil, No. 2....9-10.35
- **Fuel oil, No. 6 high sulfur....7.4-7.65†**

Los Angeles, rack
- Gasoline, 88 oct reg....11.15-12.65
- Diesel fuel, PS 200....7.75-11.25
- Light fuel, PS 300....$2.80
- Heavy fuel, PS 400....$2.15-2.35

Natural Gasoline, Grade 26-70
- FOB Group 3....4.5
- FOB Breckenridge, Tex....4

LP-Gas
- Propane, Oklahoma (Group 3)....3.5-4
- Propane, Baton Rouge....4.625

Pennsylvania Lubes
- Bright stock, 25 p.t....24
- 200 vis. neutral, 25 p.t....27

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent, 95 v.i....26-27
- Neutral, solvent, 200-210 vis....23-24

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i....26
- Neutral, solvent, 200 vis....23

Eastern Hemisphere

Singapore (Pulau Bukom) cargoes
- Avgas, grade 100/130....15.875
- Gasoline, 79 oct research....9.75
- Kerosine....10.125
- Gas oil, 48 d.i. minimum....9.5

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, (Okla.-Kan.), 36.0-36.9....$2.62-2.97
- North Dakota, 36.0-36.9....2.47-2.87
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9....3.50
  - Gulf Coast, Upper & Lower, 26.0-26.9....2.92-3.22
  - West Texas, sweet, 36.0-36.9....3.00
  - West Texas, N.M., inter., 36.0-36.9....2.93
  - West Texas, N.M., sour, 32.0-32.9....2.71
  - East Texas, flat....3.05-3.25
  - Mirando, 28.0-28.9....2.96-3.31
- Illinois Basin, flat....2.85-3.00
- Pennsylvania Grade, Bradford dist., flat....4.70
- California, Signal Hill, 21.0-21.9....2.32†
- North Louisiana-Arkansas, 36.0-36.9....2.72-3.02
- Wyoming, sweet, 36.0-36.9....2.85-2.90
- Wyoming, sour, 32.0-32.9....2.63-2.71

Canada (flat prices, at the well)
- Pembina (Alta.)....$2.38
- Leduc-Woodbend (Alta.)....2.53
- Redwater Alta.)....2.42
- Steelman A (Sask.)....2.44
- Virden (Man.)....2.30

Venezuela (Cargoes, FOB lifting port designated)
- San Joaquin, 41.0-41.9, Puerto la Cruz....$3.10
- Oficina, 35.0-35.9, Puerto la Cruz....2.78-2.80
- Tia Juana, Medium, 26.0-26.9, Amuay....2.30
- Bachaquero, flat La Salina....1.85
- Tarra, 38.0-38.9, San Lorenzo....2.83
- Lagunillas Heavy, flat, La Salina....2.07

†Differential per deg. of grav. varies

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabia, 34.0-34.9, Ras Tanura....$1.90
- Safaniya, 27.0-27.9, Ras Tanura....1.50
- Iran, 34.0-34.9, Bandar Mashur....1.86
- Iran, 34.0-34.9, Abadan....1.81
- Iraq, 35.0-35.9, Fao....1.80
- Kuwait, 31.0-31.9, Mina-al-Ahmadi....1.67
- Qatar, 41.0-41.9, Umm Said....2.05
- Neutral Zone, Burghan, 23.5-24.4, Mina Saud....1.51
- N. Zone, Eocene-Ratawi, 20.5-21.4, Mina Saud..1.38

Middle East, Eastern Mediterranean
- Arabia, 34.0-34.9, Sidon....$2.27
- Iraq, 36.0-36.9, Tripoli, Banias....2.31

Far East, Cargoes, FOB Lutong, Sarawak
- Seria Light, flat....$2.57

KEY TANKER RATES

(Last paid, per long ton, single voyage)

U.S. Gulf-New York, clean...(USMC—5%) $2.71†
U.S. Gulf-New York, dirty.....(USMC—25%) $2.14
NWI-USNH, dirty.....(USMC—55%) $1.24†
NWI-UK/Cont., dirty.....(Scale—52½) 15/7*
Persian Gulf-UK/Cont., dirty.... (Scale—65%) 23/5*
Persian Gulf-USNH, dirty...(USMC—70%) $3.81†

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ADVERTISERS IN THIS ISSUE

Cameron Iron Works, Inc. 6
Chicago Bridge & Iron Co. 35
Chikson Co. 41
Dow Chemical Co. 24-25
Dowell ..... 28-29, Cover 3
Eastman Chemical Prods. Inc. 7
First City Nat'l Bank of Houston 2
Goodyear Tire & Rubber Co. 1
Grove Valve & Regulator Co. 52
Halliburton Co. 19
Houston Ready-Cut House Co. 39
Kellogg Co. M. W. ..... Cover 4
Koppers Co., Inc. 51
Liberty National Bank & Trust Co. 31
Lone Star Steel Co. 4-5
Martin Mfgr., John N. 33
Mission Mfg. Co. 20
Ohio Injector Co., The 10
Parkersburg Rig & Reel Co. 27
Price Co., H. C. 17
Republic Nat'l Bank of Dallas 21
Southwest Industries Co. ..... Cover 2
UGC Instruments 37
Vogt Machine Co., Henry 38

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Business Opportunities 55
Employment Opportunities 55
Equipment
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WILLIAM H. FETTER has been elected president of Texas City Refining, Inc., Texas City, Tex. He has been vice-president and general manager since he joined the company in 1951.

W. H. Fetter

H. R. Smith

H. R. SMITH has been elected vice-president of Cities Service Refining Corp., Lake Charles, La. Smith, who has been with the Cities Service organization since 1923, was appointed general superintendent of the refining company in 1948. Before that, he was process superintendent at its Lake Charles refinery. He also assisted in the design and construction of that plant.

EARLE B. KNOTT has been promoted to district exploration superintendent at Corpus Christi, for Tennessee Gas & Oil Co., domestic and Canadian exploration and production division of Tennessee Gas Transmission Co. Knott was formerly district geologist for Tennessee Gas at Shreveport, La. He joined TGT when it acquired Midstates Oil Corp., of Tulsa, in 1958 .

RAY C. MORRIS moves up to the newly created position of division operations geologist for Pan American Petroleum Corp.'s central division, at Oklahoma City. He was formerly area geologist at Pan Am's Liberal (Kan.) district.

W. E. LONG has been appointed sales manager of Houston Natural Gas Corp., Houston. He has been asssistant to the president for the past five years.

JACK N. WEST moves up to manager of Pure Oil Co.'s Toledo (Ohio) refinery. West, who has been with Pure since 1940, has been general superintendent of that plant since 1958. He succeeds **Hal H. Dronberger,** who has elected early retirement.

E. F. BATTSON has been elected president of Refineria Panama, S.A., with offices in New York. Refineria Panama, jointly owned by Continental Oil Co. and interests of National Bulk Carriers, Inc., will operate a $30-million refinery now under construction in Panama. Battson, a former vice-president and director of Conoco, has served as a consultant to the company since his retirement in 1958. **H. P. Solem,** who has been general manager of petrochemical sales for Conoco since 1953, is executive vice-president of the Panamanian company, with offices in New York. **D. R. Johnson** and **W. W. Wagner** are vice-presidents of Refineria Panama. Johnson will also continue as Conoco's vice-president and general manager of manufacturing, with offices at Houston. Wagner, who is executive vice-president of National Bulk Carriers, Inc., will continue to be located in New York.

F. B. WINBERY is manager of a newly consolidated district, which includes the Dallas district of United Gas Pipe Line Co. and the Tyler (Tex.) district of Union Producing Co. Both companies are subsidiaries of United Gas Corp. Winbery, who will be located at the new district's main office in Tyler, was formerly manager of the Dallas pipeline district. **Boyd K. Watson, Jr.,** formerly landman in the Tyler producing district, has been promoted to assistant manager of the consolidated district. The district's dispatching department will be moved to the United Gas Pipe Line office in Carthage, Tex., and the chart department will be transferred to the United Gas general office in Shreveport, La.

GUY E. CAMPBELL moves up from acting division manager to division manager of Sun Oil Co.'s Mid-Continent production division, with headquarters in Tulsa. **William R. Gannaway** has been named to the newly created position of assistant division manager at Tulsa. He was formerly assistant division chief geologist there. **J. Edward Green,** formerly regional geologist, succeeds Gannaway. **Jack G. McQueen,** formerly acting division manager of the land department, moves up to manager. **Floyd T. Gates,** formerly senior landman, has been named assistant division manager of the land department.

MARTIN L. COURTER transfers to Shell Chemical Co., as process development manager in the industrial chemicals division, with offices in New York. He was formerly supervisor in the chemical process engineering department at Shell Development Co.'s Emeryville (Calif.) research center.

DR. L. R. HELLWIG is head of the newly created planning division of Cities Service Research & Development Co., with offices in New York. The new division will coordinate and direct long-range research and product development activities for all Cities Service petroleum and natural gas operating subsidiaries. Hellwig was formerly head of engineering research for Petroleum Chemicals, Inc., Lake Charles, La., jointly owned by Cities Service and Continental Oil Co. **Alfred L. Regnier** and **Robert M. Henderson** have been transferred from PCI to Cities Service Research's headquarters in New York. Regnier will be manager of project analysis, and Henderson will be manager of market research. At the same time, other scientific personnel have been transferred from PCI to the research and develop-

ment company's laboratory at Lake Charles. The parent Cities Service Co., has also established a new petrochemical development division to coordinate petrochemical activities of the Cities Service system. It will be responsible for watching developments in the petrochemical industry, and for recommending commercial areas to Cities Service.

T. H. RHODES is the new head of the marketing and technical service coordination section in the chemical division of Enjay Chemical Co., New York, a division of Humble Oil & Refining Co. **R. T. Kelley** succeeds him as head of the manufacturing coordination section. Kelley, who joined the company in 1950, formerly headed a butyl technical group at the Baton Rouge refinery. **T. C. Drakos** is Enjay's new marketing coordinator, and **D. H. McClure** is the new manufacturing coordinator. Drakos has been serving as technical sales representative for chemicals in Enjay's Los Angeles district office, and McClure was engaged in design work in chemical technical service at the Baton Rouge refinery. The four men will be located in New York.

F. T. LUNDIN becomes vice-president of sales for Dri-Gas Co., Hinsdale, Ill., a division of Warren Petroleum Corp. Lundin has been sales manager of the Eastern division for the past five years. **Frank Dragoun** and **Robert Sawn** have been promoted to co-sales-managers under the supervision of Lundin. Dragoun was formerly district manager in Eola, Ill., and Sawn was district manager in Lafayette, Ind.

W. WARD KEMPER is the new employee relations coordinator for Gulf Oil Corp.'s domestic producing department, with offices in Houston. Kemper, who was most recently management analyst for Gulf's Houston production headquarters, succeeds the late **Herman E. Teale.**

K. Doig

R. L. Ferris

R. L. FERRIS has been named chief exploitation engineer, and **KEITH DOIG** chief mechanical engineer, in Shell Oil Co.'s Houston area production department. Ferris succeeds **C. V. Cameron,** who has been appointed head of a newly created systems engineering group in Houston. Ferris was most recently chief exploitation engineer in Shell's Midland area. Doig was previously senior mechanical engineer at Shell Development Co.'s exploration and production division, in Houston. He succeeds **John M. Payne,** who has recently transferred to Shell's Denver area.

J. O. Bower

F. L. LeRoy

JOHN O. BOWER is the new president and chief executive officer of Colsag Corp., parent company of Colombian oil interests jointly owned by Socony Mobil Oil Co. and Texaco Inc., **FRANK L. LeROY** is vice-president and general manager of Colsag's operating subsidiaries, Colombian Petroleum Co. and South American Gulf Oil Co. Bower, who has been with Texaco in Latin America for the past 20 years, was most recently executive vice-president of Colsag. In his new position, LeRoy succeeds **Max E. Crawford,** who has returned to Texaco as manager of the Venezuelan producing division of its subsidiary, Texas Petroleum Co. LeRoy has been with Mobil for the past 22 years. Bower will headquarter in New York; LeRoy in Bogota.

SIX DEPARTMENT MANAGERS have been appointed by Mobil Chemical Co., an operating division of Socony Mobil Oil Co. **Warren A. Beman** is in charge of new projects-domestic, and **Arnaud de Vitry** is in charge of new projects-international. **Alfred G. Rossow** heads market research; **William D. Warmach,** economic appraisal; **Thomas L. Apjohn,** additives; **George H. Hocking,** sales.

C. C. WALLACE assumes the newly created position of assistant general superintendent of Sun Pipe Line Co.'s crude lines department, at Beaumont, Tex. **Jesse D. Duplissey** succeeds Wallace as Gulf Coast area superintendent for the crude lines department, at Beaumont. Duplissey was formerly superintendent of transportation and oil handling for Venezuelan Sun Oil Co., at Maracaibo, Venezuela. **James E. Ware** is the new assistant Gulf Coast superintendent.

JOSEPH F. BAYHI, acting manager of Jersey Production Research Co.'s geophysical division, assumes a one year assignment with Humble Oil & Refining Co., in Houston, as assistant chief of geophysical research. **Jesse D. Skelton** returns from a one year loan assignment with Humble, to become acting manager of Jersey Production's geophysical division, at Tulsa. Bayhi has also been a field and research geophysicist for Jersey Production and for Humble's Carter division.

E. S. KARSTEDT, JR., has been promoted to the newly created position of director of lubricating oils and wax sales for Continental Oil Co., with offices in Houston. He was formerly assistant manager of bulk sales in Houston, and also served as manager of Conoco's export sales division, in New York.

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The Price of Gasoline is Controlled

THE TAX COLLECTOR CONTROLS THE PRICE motorists pay for gasoline, not the manufacturer of the product. The control exercised by high gasoline taxes hits the industry a rough blow on the price it receives for its largest-volume product.

Nationwide, the combined federal and state taxes average 10.15¢ per gal., or 48% of the service station price (exclusive of taxes) for regular-grade gasoline. At the wholesale price level, the combined taxes amount to 90% of the price refiners receive.

LOOKING AT INDIVIDUAL AREAS, the control of price by taxes is brought into sharp focus. Generally, where the combined taxes are the highest, the service station price, ex tax, is the lowest.

Motorists in Birmingham, Ala., enjoy the lowest service station price, ex tax, of any major city in the nation. But they can also claim the highest tax on gasoline in the land. The total tax there is 12¢ a gal.—consisting of 7¢ levied by the state, 4¢ collected by the federal government, and another 1¢ picked up by the city commissioners. The 12¢ collected there on each gallon is 75% of the 15.9¢-a-gal. service station price, ex tax. It is more than the refiners' price of the gasoline.

The "price" that the Birmingham motorists pay is the same as a car owner pays in Boston—27.9¢ a gal. for regular. But the service station price in Boston, ex tax, is 18.4¢ a gal. and the combined state and federal tax is 9.5¢ a gal. Motorists in Newark, N. J., and in Philadelphia also pay 27.9¢ a gal. for regular, but in those two cities the tax included in the total is 9¢ a gal., and the service station price, ex tax, 18.9¢ a gal.

In St. Louis, where the combined tax is the lowest for a major city at 8.5¢ per gal (including 1.5¢ city tax), the service station price, ex tax, is 21.4¢ per gal.

The tax toll amounts to an indirect ceiling on the price of gasoline. In fact, the oil industry gets the blame from the public when the price on the pump goes up due to increases in the tax at one of the government levels.

SUCH A SITUATION led Harvard economist Theodore Levitt to comment in a recent analysis of the industry:

"The gas station is like a tax collector to whom people are compelled to pay a periodic toll as the price of using their cars. This makes the gas station a basically unpopular institution. It can never be made popular or pleasant, only less unpopular, less unpleasant."

WHAT CAN BE NEW IN ACIDIZING AFTER 28 YEARS?

Answer: practically everything. Since 1932 when Dowell introduced inhibited acidizing, continuous improvements have been made in this method of well stimulation. For example, acidizing was originally used to improve the producing characteristics of only highly soluble formations like limestone or dolomite. This is no longer a limitation. Conglomerates, chats and even some sandstones are frequently helped with Dowell acidizing. From the simple method of "dumping" inhibited hydrochloric acid, Dowell has developed a host of effective new techniques, special acids and special chemicals. Just recently, Dowell introduced an even more precise method for *engineering* acid treatments called the "Acid Guide"*. Today you, as an operator, have the added assurance that this old service is younger than ever . . . more effective . . . streamlined to meet your needs and help you get more oil. What's new in acidizing? Plenty, and you can count on Dowell to continue developing even better methods. Get more for your money. *Dial Dowell.* Dowell, Tulsa 1, Oklahoma.

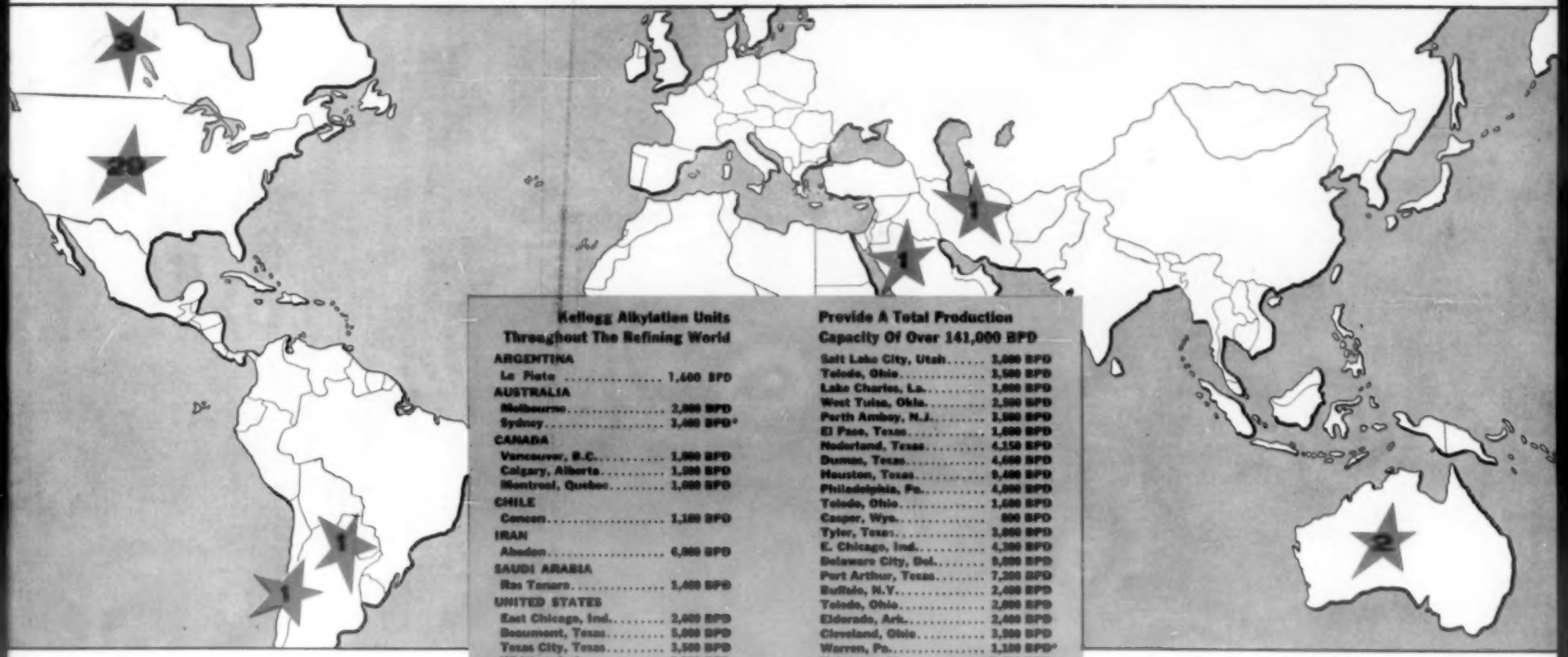
*DOWELL SERVICE MARK

Services for the oil industry — DOWELL

DIVISION OF THE DOW CHEMICAL COMPANY

KELLOGG'S WIDENING WORLD OF ALKYLATION EXPERIENCE

Reduces Unit Investment and Operating Costs—Increases Range of Feedstocks and Yields



Kellogg Alkylation Units Throughout The Refining World

ARGENTINA	
La Plata	1,600 BPD
AUSTRALIA	
Melbourne	2,000 BPD
Sydney	3,400 BPD*
CANADA	
Vancouver, B.C.	1,000 BPD
Calgary, Alberta	1,200 BPD
Montreal, Quebec	1,000 BPD
CHILE	
Concon	1,100 BPD
IRAN	
Abadan	6,000 BPD
SAUDI ARABIA	
Ras Tanura	1,400 BPD
UNITED STATES	
East Chicago, Ind.	2,600 BPD
Beaumont, Texas	5,000 BPD
Texas City, Texas	3,500 BPD
Whiting, Ind.	5,000 BPD
Lake Charles, La.	12,750 BPD
Lake Charles, La.	10,575 BPD

Provide A Total Production Capacity Of Over 141,000 BPD

Salt Lake City, Utah	2,000 BPD
Toledo, Ohio	3,500 BPD
Lake Charles, La.	3,000 BPD
West Tulsa, Okla.	2,500 BPD
Perth Amboy, N.J.	2,500 BPD
El Paso, Texas	1,600 BPD
Nederland, Texas	4,150 BPD
Dumas, Texas	4,650 BPD
Houston, Texas	9,400 BPD
Philadelphia, Pa.	4,000 BPD
Toledo, Ohio	1,600 BPD
Casper, Wyo.	800 BPD
Tyler, Texas	1,000 BPD
E. Chicago, Ind.	4,300 BPD
Delaware City, Del.	9,000 BPD
Port Arthur, Texas	7,200 BPD
Buffalo, N.Y.	2,400 BPD
Toledo, Ohio	2,000 BPD
Eldorado, Ark.	2,400 BPD
Cleveland, Ohio	3,300 BPD
Warren, Pa.	1,100 BPD*
Robinson, Ill.	2,000 BPD
Toledo, Ohio	3,000 BPD

*Future

FOR REFINERS wishing to increase their barrel octane for the lowest optimum over-all expenditure, Kellogg can design and build an alkylation unit which will utilize normal refinery feeds, yield the desired quantity and quality of alkylate, yet cost less to install and operate than ever before.

This economic approach to a high octane product for the gasoline pool, when and as required, is made possible through Kellogg's experience to date in engineering and building 38 alkylation units of various designs, for both large and small refiners, in 6 foreign countries as well as in 13 States at home.

The most efficient, most economical, and most flexible of these alkylation units are those utilizing Kellogg's most recent sulfuric acid, multi-stage cascade reactor design. Whether for 500 or 15,000 BPD, Kellogg can undertake the entire design, procurement, and construction of one of these units for a lump-sum contract.

Designed to operate on butylene, propylene, amylenes, or a combination feed, these new units offer many advantages over other models. They can produce an LPG product, as well as high octane alkylate, without supplementary towers or equipment. They reduce corrosion to a minimum without extensive use of expensive chemicals. They are extremely low on acid consumption—using, for example, less than 0.3 sulfuric acid per gallon of alkylate. They are adaptable to seasonal demands—capable of maintaining peak barrel octane production at minimum operating cost.

Kellogg welcomes the opportunity to discuss the details of its alkylation process with you.

THE M. W. KELLOGG COMPANY

711 Third Ave., New York 17 *A subsidiary of Pullman Incorporated*

Offices of Kellogg subsidiary companies are in Toronto, London, Paris, Rio de Janeiro, Caracas, Buenos Aires

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